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PROCESS PATENTS
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THE ABSO-DRY GUARANTEE

Every trace of moisture has been removed from this dryer by the exclusive Henry Vacuum Process. When the seal cap at the inlet end is removed, there is a hissing sound due to the escape of dehydrated air. This is your guarantee that the dryer has reached you in the same condition as when it left the factory and that original drying efficiency has not been impaired.

If this dryer does not hiss, your jobber is authorized to exchange it for a new one.



★
YOURS FOR
THE ASKING



HENRY REFRIGERATION AND
AIR CONDITIONING
CATALOG NO. 73

★
This new 1938 catalog describes the industry's most complete line of dryers, strainers and large line valves. It will be of special interest to you to learn about the many new Henry items.

INTRODUCING the NEW - ABSO-DRY Pressure Sealed Dryers

Now at last you can install a dryer and be sure of an absolutely dry dehydrant. Henry now offers you dryers, not only absolutely dry, but also positive audible proof that no moisture has been absorbed up to time of actual installation.

Every trace of moisture is removed from these new Abso-Dry units by the exclusive Henry Vacuum Process. When the seal cap at one end of the dryer is

removed, there is a hissing sound, due to the escape of dehydrated air. This is your guarantee that the dryer will reach you in the same condition as when it left the factory and that the original drying efficiency will not be impaired.

Best of all, Abso-Dry Pressure Sealed Dryers offer you at no increase in price, all the other features of engineering design and construction that have been responsible for Henry's rise to Leadership in the industry.

HENRY PRODUCTS ARE STOCKED AND SOLD BY THESE LEADING JOBBERS

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CLEVELAND, OHIO Refrig. Sup. Distr. of Cleveland, Inc.
CLEVELAND, OHIO Williams & Co., Inc.
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DETROIT, MICH. Borg-Warner Serv. Parts Co.
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NEW YORK, N. Y. C. W. Rudzinski
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THE COLD CANVASS

By B. T. Umor

Blush With Shame

Old B.T.U. has a face which is red as a beet these days, and it's not just sunburn, either. It seems that there was quite an error in this column last week. People have been speaking rather sharply about it.

When discussing Powel Crosley's red-hot Cincinnati Reds baseball team, "The Cold Canvass" pointed to home-run-hitting Ival Goodman as the "prize rookie of the year." Goodman is not exactly a rookie, having been around the big time long enough to have a record with whiskers on it.

But Cincinnati does indeed have the prize rookie of this year. His name is McCormick, and at the moment this is being written, he is tied with Lavagetto of the Brooklyn Dodgers for the National League batting championship, with an average of .379.

Last Friday night in Cincinnati we saw McCormick and his mates perform at Crosley Field in a night game with the St. Louis Cardinals. The Reds won 2 to 1, in 10 innings. They are a smart, hustling ball club; with a bunch of youngsters (including four rookies) who are going to make league history in coming years.

Sitting in the Crosley box, we had an opportunity to observe that Owner Powel Crosley, Jr., is not just an owner. He's a keen analyst of the game. Invariably he was accurate in "calling the shots" on Manager McKechnie's master-minding before the strategy took place on the field, and after it did take place, he could tell you why.

Lewis Crosley is an old-fashioned fan, who gets as big a kick out of a timely base hit or strike-out as anyone you ever saw.

All in all, it was a swell evening.

High-Class Business

If you meet up with R. H. Guyton, chief engineer of Brunswick-Balke-Collender Co., get him to tell you about some of the interesting features of the bowling alley business. His company manufactures enormous quantities of balls and pins, as well as the expensive equipment required to set up a bowling alley.

In former years, bowling alley operators were usually classed, along with pool room operators, rather low in the social scale of business. But bowling is enjoying a new wave of popularity as sponsored by the movie stars of Hollywood, and has now taken on the stature of big business in several sections of the country.

Mr. Guyton explains the difference between the old and the new by telling about the rule which formerly applied to bowling alley operators. In the old days usual history of a bowling alley ran like this:

First year: Operator worked long and hard, kept up his payments on the equipment, and made a nice profit.

Second year: Operator bought a car, devoted less time to his business, and fell a little behind with his payments.

Third year: Operator acquired a lady friend of the type usually designated by a five-letter word beginning with "w," and quit making payments.

Fourth year: Company took over the equipment and set up a new operator.

Definition

Perhaps Stuart Chase is not alone in his admitted confusion over definitions. The amendment to the Federal Trade Commission Act which becomes

(Concluded on Page 3, Column 1)

Furniture Dealers Seek an End To Long Warranties

MONTGOMERY, Ala.—A resolution opposing the continuance of long-term guarantees on electric refrigerators was passed by members of Alabama Furniture Dealers' Association at their eighteenth annual convention here.

Members of the association are in favor of limiting guarantees to one year, according to Ira F. Randall, executive vice president. Text of the resolution passed at the convention reads:

"Whereas, the public is being misled by the guarantees on electric refrigerators; and

"Whereas, such warranties reflect unfairly on the merchant; and

"Whereas, the insertion of small type in printed guarantees qualifies these guarantees;

"Now, therefore, be it resolved that the Alabama Retail Furniture Dealers' Association request the electric refrigerator manufacturers to desist from making long-time guarantees or warranties on any parts of such refrigerators with possible reflection on the merchant who sells them, because of customers' misunderstanding, and that a copy of this resolution be forwarded to the National Retail Furniture Dealers' Association, to individual manufacturers of refrigerators, to the National Electrical Manufacturers Association, to the Alabama Electrical Dealers' Association, and to the Florida Electrical Dealers' Association."

Bendix May 'Punish' Price-Cutting Dealers By Disenfranchisement

NEW YORK CITY—A program to stop price-cutting by Bendix dealers in the New York area through the disenfranchisement of offenders reported through a highly organized shoppers' system was announced last week by Louis Chatten, eastern regional manager for Bendix Home Appliances, Inc., before a meeting of 100 dealers in the New Yorker hotel.

Strict enforcement of dealer requirements may result in the ultimate dropping of close to 50% of the present number of Bendix dealers in the New York area, it was said.

A new schedule of trade-in allowances was announced at the meeting. This includes an allowance of \$5 on a so-called "baby" washer; \$10 for wringer-type washers; and \$15 for spinner-type units.

Details of a home demonstration drive, in which dealers are expected to take part, were outlined at the meeting. To further this program, Bendix has developed a device for temporary installation of the laundry equipment in the home, without anchoring to the floor. This will be available to dealers, as a unit, for \$10, officials declared.

Irving Sarnoff, vice president in charge of sales for Bruno-New York, Bendix distributor, and Harry Glass, manager of the distributorship's Bendix division, also spoke at the meeting.

'Direct Selling' Abolition Helps Kansas Dealers

Kansas City, Kan. Sales Increase After Pact Is Made Effective

KANSAS CITY, Kan.—Elimination of direct-selling at wholesale by distributors, established last year by agreement between distributors, dealers, and the Board of Public Utilities, has been largely responsible for a 40% increase in dealer sales of electrical appliances in Kansas City, Kansas, so far this year, reports Richard Lewellyn, merchandise representative of the utilities board.

Under the agreement, which was sponsored by Mr. Lewellyn, distributors are pledged to a policy of seeing that all appliances are sold at retail and through dealers, despite "friendship" connections and the pressure brought by "close" relatives.

Seven distributors and 12 dealers are involved in the campaign to control the direct-sales malpractices, which Mr. Lewellyn says is chiefly

(Concluded on Page 20, Column 3)

Kelvinator Mapping National 'Crusade'

DETROIT—Success of Kelvinator's "National Salesman's Crusade" test campaign in Lincoln, Neb., has convinced executives of the company that definitely positive results can be obtained by an extension of the drive on a nation-wide basis, it was announced here this week. Final results of the test drive are being tabulated.

It was considered likely, however, that inauguration of the campaign on a national scale would be moved back about a week from June 6, the date originally set for the beginning of this activity.

President George W. Mason will start off the Crusade on its nationwide scale in a telephone hook-up with the various cities cooperating in the "Sales Mean Jobs" effort. An audience of 15,000 Kelvinator sales-

(Concluded on Page 20, Column 4)

Dekker Directs Brunner Mid-South Sales

UTICA, N. Y.—H. S. Dekker has been placed in charge of the mid-south territory for Brunner Mfg. Co., succeeding R. E. Mercer, who has been transferred to the Chicago territory. In his new post, Mr. Dekker will cover Tennessee, Alabama, Mississippi, and the lower part of Louisiana.

Mr. Dekker's experience covers many phases of commercial refrigeration. For three years he was in the Kelvinator technical department, leaving there to join Brunswick-Balke-Collender Co., where he was

(Concluded on Page 3, Column 4)

Giving the Story Of Locker Storages For Refrigeration Men

This is the first of two issues which will present special editorial information on the subject of refrigerated locker storage plants. (See pages 4, 7, 8, 12, 13, and 20.)

The editors have aimed to gather the type of information about locker plants that will help the dealer and salesman who are selling equipment for these plants, and which may also aid the engineers who are designing and installing systems for this application of refrigeration.

More information about the refrigerated locker storage field will be published in the next (June 8) issue of the NEWS.

New Control Designed For Commercial Units

MINNEAPOLIS—The "Polartron" system of commercial refrigeration control, consisting of a new primary controller which senses conditions within the refrigeration system and a thermostat which accurately follows each change within the fixture, has been announced by its manufacturer, Minneapolis-Honeywell Regulator Co.

Basic principle of the Polartron is not new, Minneapolis-Honeywell engineers point out. Actually this

(Concluded on Page 14, Column 1)

'38 Conditioning Sales In Houston Top \$1,000,000

HOUSTON, Tex.—Contracts for air conditioning let in Houston during the first three months of this year aggregate more than \$1,000,000, and new work authorized in this field is estimated at \$2,000,000, according to a survey by the Houston chamber of commerce.

This year's installations, the chamber determined from interviews with engineers, contractors, and distributors, will surpass any previous year, and may reach a total investment of \$6,000,000.

Acceptance of air conditioning was slow for the first 10 years from its beginning in the Texas city in 1923. The Second National Bank installed a 192.5-hp. unit in 1923, and for two years it was the only "air-cooled" business place in southeast Texas. In 1925, the Majestic Theater saw the opportunity of attracting summer patrons with this improvement and installed a 250-hp. unit.

At the close of 1933, 10 years after Houston's first installation, there had been but 28 air-conditioning units installed in the city, but the following year saw more installations than all the previous years combined.

In 1937, installations totaled 271 units, three times that of any previous year, and more than all former years combined. There are now 129 residences with air-conditioning equipment, and 343 industrial and commercial establishments.

Utility Conclave To Seek Backing Of the Consumer

'Public Relations' Major Topic; Kitchen Bureau Plans To Be Heard

ATLANTIC CITY, N. J.—Matters of broad interest to the electric utility industry as a whole, rather than specialized discussions of particular matters of administration and operation, will occupy the attention of Edison Electric Institute members at their sixth annual convention here June 6 to 9.

Subjects scheduled for discussion during the four-day meeting include such topics as power sales and profits, advertising and publicity as a component of public relations, building in the future for residential sales, how to make customers like utility companies, the outlook for private enterprise, and the two World Fairs to be held next year.

Executive committee of the Modern Kitchen Bureau will meet on June 8, to review the progress of its early season electric range, refrigerator, and water heater activities, and discuss plans for late summer

(Concluded on Page 3, Column 2)

228,100 Units Sold To Dealers In April

DETROIT—World sales of household electric refrigerators by U. S. manufacturers to distributors and dealers during April of this year totaled 228,100 units, a drop of slightly more than 36% compared with the 363,500 units shipped during the month last year, according to estimates by the NEWS.

For the first four months of this year, manufacturers' world sales of household refrigerators were off approximately 42% from their 1937 marks, totaling 689,800 this year as compared with 1,182,900 for the same period a year ago.

World sales by manufacturer-members of National Electrical Manufacturers Association totaled

(Concluded on Page 3, Column 5)

Georgia Power Salesmen Vie For Cruises, Cash

ATLANTA—The second annual "Cruise of Happiness" major appliance sales campaign, with a quota of 7,500 units of residential and commercial electrical appliances and \$3,500 in cruises and cash prizes for individual salesmen, was launched by Georgia Power Co. at its annual banquet in the Atlanta Athletic club, attended by more than 500 employees and executives of the utility.

A 70-day campaign, the "Cruise of Happiness" has quotas of 3,500 electric refrigerators, 1,673 electric cooking units (one range or two roasters constitutes a unit), 844 water heaters, and 127 gas ranges.

Crosley Goes Back To the Low-Priced Refrigeration Market



(1) President Powel Crosley, Jr., studies the figures and decides that now is the time to go back to the \$99.50 household refrigerator, which he pioneered. (2) Advertising Manager John Garceau goes into action on a high-powered promotion campaign. (3) Mr. Crosley, in his office, works out the final construction details. (4) With Vice President Charles D'Olive (left), Mr. Crosley greets the first of his new 1939 models.

Profitable Sales Ideas

Small-Town Service Station Finds Farmers Best Prospects For Appliance Line

FREMONT, Ind.—Adding the sale of Crosley refrigerators and radios to his automobile service and supply business has proved to be a profitable venture for George Snyder, proprietor of Snyder Super Service here.

Three years ago Mr. Snyder took on the appliances as something which he could sell at a profit. Last year he sold 14 refrigerators, most of them 7-cu. ft. cabinets, and 25 radios, a good record considering that Fremont's population is only about 800, and that rural electrification has not been developed to a great extent in this region.

"I expect to double last year's sales in 1938," predicted Mr. Snyder, "because scores of new prospects have electric service now in lower Michigan, where much of my trade is coming from."

"All of northern Indiana is scheduled for rural service soon, and the farm families are looking forward to buying electrical appliances."

BALANCES BOTH LINES

Mr. Snyder has adopted the practice of balancing his automotive and appliance businesses, concentrating efforts on one when the other slacks up, and thus keeping operating costs at a steady, normal level.

Attractive display of appliances and follow-up calls in the prospects' homes are the two most effective means of sales-getting used by Mr. Snyder.

He regards his appliance business as an enterprise which can increase year after year and become more profitable as it grows.

"Investment in a sample refrigerator and a few radios is very small," he explained. "Properly displayed, and with sales effort during spare moments, they will be sold out in a very short time. Turnover is good. I never carry more than one refrigerator in stock at any time, and carry two or three radios as samples."

Promotion of the appliances is included in his regular local newspaper advertisements, which are primarily concerned with the Snyder gas and oil business, greasing and washing service, tires, batteries, car heaters, and other automotive supplies.

"We are several miles off the main highway," Mr. Snyder pointed out, "and our business is strictly local except during the three summer

vacation months, when a considerable volume of tourist business comes in."

Plans have been made for the addition of washing machines, ironers, and perhaps electric ranges, once the rural homes are equipped with electric power.

"The farm home needs just about twice as much electrical equipment as the average city home," said Mr. Snyder. "The farm wife wants her electric washer, refrigerator, range, ironer, mixer, toaster, percolator, and other appliances. But in addition, there is a need for an automatic water pressure system, small motors to run the feed grinder, the tool grinder, the hay unloader, the silage cutter, corn sheller, high speed saws, and so on."

"Then there is the milking machine, the cream separator, the electric churn, chick brooders, electric fence units, and numerous other labor-saving devices."

FARMERS BEST

Mr. Snyder considers the farmers better able at present to buy electrical equipment, and believes that the sale of one appliance leads to another so that the farmers become cooperatively permanent customers.

Most sales to farmers are cash, Mr. Snyder declares, and financing is an easy matter, either through established financing companies or through local banks.

"Selling and servicing appliances has been a splendid source of extra profit for me," Mr. Snyder asserted, "and I believe it will improve in proportion to the advancement in rural electrification."

Secret Bids On Refrigerators Obtain 1,000 Prospects

MONTGOMERY, Ala.—To obtain a new list of prospects, the Frigidaire appliance department of Montgomery Fair, local department store, recently conducted a secret bid auction of a 6-cu. ft. refrigerator.

Prospects were invited to visit the department, inspect the appliances, and submit secret bids for the refrigerator on sale. All bids were opened on the last day of the week's auction, and the highest bid took the refrigerator. More than 1,000 prospect names were obtained.

'Parties' For Prospects At Users' Homes Are Good Sales Builders

HUTCHINSON, Kan. — Small, neighborly gatherings at the homes of satisfied users or of "extra hot" prospects are used effectively by C. E. Olson, head of the appliance department of Wiley's Department Store, to garner leads for new electric refrigerator sales.

If a prospect is to be "hostess" for the "party," a refrigerator is installed and placed in operation in her home before the guests arrive.

Usual procedure is for the hostess to invite eight or 10 families over for the evening. Soon after the guests arrive, Mr. Olson shows a factory produced motion picture film, outlines the refrigerator's merits, and gives each guest an ample supply of sales literature about the unit.

Then he serves the guests (and the hostess, too, of course) with ice cream and cookies. Paper dishes, supplied by Mr. Olson, are used for this purpose unless the hostess prefers to use her own.

Mr. Olson then leaves, and lets the hostess take its natural course.

Next day, when Mr. Olson or his men come back, the hostess tells them which of her guests were the most interested in the refrigerator. Usually at least six prospects are immediately available for further contact. Almost invariably at least two or three sales result within 10 days of each of these parties.

Mr. Olson attributes the high sales percentage to the fact that the prospects developed in this way are "hand picked" ones who, if they at least had not been mildly interested in refrigeration, would never have accepted the invitation.

Salesman Stays Up All Night To Sell Telephone Operator

ATLANTA — Selling knows no hours, says L. H. Wallace, Inman Park salesman in Georgia Power Co.'s Atlanta division—and proves it by his own experience.

Mr. Wallace had a prospect for an electric refrigerator, but the woman was a night telephone operator who slept most of the day, so it was difficult to see her.

After several unsuccessful daytime call attempts, Mr. Wallace finally decided to stay up and see the woman as she came off duty at the telephone exchange.

This he did—and came home with a signed order for a 4-cu. ft. model.

\$82,000 Orders Booked To Surprise Distributor

NEW ORLEANS — A "surprise party" honoring C. O. Brown, district manager of General Electric Supply Co.'s office here, and staged by Tom F. Campbell, commercial refrigeration manager, and Herman Salzer, assistant appliance manager, resulted in dealer orders for appliances totaling \$82,000 in a 24-hour drive, largest one-day sales total in the branch's history.

Staged while Mr. Brown was attending a G-E conference in Bridgeport, Conn., the sales drive brought orders from 79 of the 90 dealer accounts contacted by Sponsors Campbell and Salzer.

Refrigerator Tells Own Sales Story



Crosley's "musical" Shelvador, equipped with radio, is made to sell itself by connecting up a phonograph and playing a recording of a sales talk.

Phonograph Hooked Up To 'Musical' Shelvador Points Out Features & Demonstrates Music

CINCINNATI—The "musical Shelvador," Crosley's electric refrigerator which may be equipped with a radio at the buyer's option, is made to "sell itself" by means of a phonograph turn-table which is connected to the radio chassis in the refrigerator. Not only does the radio tell about the features of the refrigerator, but it also demonstrates itself with music.

POINTS OUT FEATURES

In a dramatized sales presentation on a phonograph record, the refrigerator introduces itself; then each feature, such as the "Electrosaver" refrigerating unit, the "quick-release" cube tray, the Shelvador feature, the built-in thermometer, and other features take part in the dialog, personalizing their service to the housewife.

The phonograph turn-table is placed conveniently near the refrigerator, and its connections attached to the chassis of the radio in the refrigerator. The salesman places the record on the turn-table and the five-minute sales presentation starts. As the different parts describe themselves and explain what they do, the salesman, standing by the refrigerator, points them out to the prospect.

MUSIC DEMONSTRATED

The musical feature of the refrigerator demonstrates itself at suitable times during the sales presentation, giving the sales talk a certain amount of entertainment and interest value to hold the prospect's attention throughout the presentation. The prospect not only learns about the refrigerator, but is shown how pleasant and helpful the radio in the

refrigerator will be for her when she is working in the kitchen.

The dramatized sales record has a number of applications. In addition to being useful to the salesman in making his presentation, it can be played in doorway displays, and used in sales meetings and at shows and exhibitions.

Hot Weather Will Release Westinghouse Fan Ads

MANSFIELD, Ohio—Hot-weather temperatures will set an automatic "release date" on Westinghouse's summer fan newspaper advertising schedule. Advertising copy and mats already have been sent to 203 newspapers, and await only the "weather break" for publication.

Release of the advertising is hinged on a predetermined temperature calculated from the newspaper forecasting service. When the forecast is received for a three-day stretch of the predetermined temperature, the newspaper in that community releases the lead advertisement, without direction from Westinghouse merchandising headquarters here.

Remainder of the series, which runs to four advertisements in the major market centers, will be released on a similar basis, "plugging" the electric fans when weather conditions suggest them most.

The theme of "Hushed Coolness" will be employed in the entire newspaper series, as well as in all forms of display and magazine advertising, and direct-mail literature. Illustration used is that of a little girl in bed, with the fan by the bedside, to assure sleeping comfort with a minimum of noise.

MASTER CRAFT

ADJUSTABLE PAD AND CARRYING HARNESS The most efficient and economical equipment made for handling refrigerators safely and without scratching or marring. Pad is separate from carrying harness and both adjustable to all sizes of cabinets.

Efficient, sturdy, easily applied. Name of refrigerator attractively lettered on pad without charge.

Adjustable Pad, \$9.50 each

Adjustable Harness, \$6.00 each

f.o.b. Chicago.

Write for 1938 folder and prices on pads for refrigerators, washers, ironers, ranges, etc.

Pat. Appl'd for

BEARSE MANUFACTURING CO.

3815-3825 Cortland Street, Chicago, Illinois

10 POINTS OF TEMPRITE SUPERIORITY

QUIETNESS

No. 6 In the Temprite Multiple System of Water Cooling, the compressor is installed remote. There can be no noise at the cooler.

Yet Temprite does not use cold water circulating lines—which not only cuts installation cost, but reduces operating costs by as much as 60%.

Beautiful—Economical—Quiet

Write for the full details of Temprite's 10 points of Superiority.

TEMPRITE PRODUCTS CORP.

55 PIQUETTE AVE., DETROIT, MICH.

EASY TO HOLD

Artic

(DU PONT METHYL CHLORIDE)

DU PONT

ARTIC does not corrode metals or alloys generally used in refrigerator system construction, even if moisture is present. It operates efficiently in compact, light weight units with low power consumption. It gives controlled low temperatures down to -10°F. at POSITIVE pressures. For dependable refrigeration, specify and use ARTIC.

E. I. du Pont de Nemours & Co., Inc. The R. & H. Chemicals Dept. Wilmington, Del.

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

ARTIC—THE PREFERRED METHYL CHLORIDE FOR THE SERVICE MAN

THE COLD CANVASS

By B. T. Umore

(Concluded from Page 1, Column 1) effective this month goes to some pains to define food, drug, device, and cosmetic, the last being this:

"The term 'cosmetic' means (1) articles to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof intended for cleansing, beautifying, promoting attractiveness, or altering the appearance, and (2) articles intended for use as a component of any such article; except that such term shall not include soap."

Which could also mean a pair of pants, says "Dun's Review."

Locker Storage Not New

Baker Ice Machine Co. is not exactly one of the giants of the industry, although it has been putting out a good product for a long, long time.

J. M. Fernald, its general manager, says that the Baker idea is to pioneer new applications, to concentrate on special jobs.

Hence, this locker storage thing, which has been exciting the refrigeration industry so much this year, is old stuff to Mr. Fernald. Baker locker storage installations have been going on in the field for more than three years.

At present, Baker is pioneering the air conditioning of buses (see story in April 20 issue of AIR CONDITIONING & REFRIGERATION NEWS) and citrus cold storage plants.

By storing oranges in immense coolers (50 to 80 ton jobs), growers can protect their crops and dole them out as needed during the year, instead of glutting the market all at one time.

Professor Quiz

It seems pretty well agreed around the industry that Nash-Kelvinator really threw an eleven with the Professor Quiz program. Radio seems sadly in need of something original like Professor Quiz, to replace the rapidly palling comedians with the more intelligent type of listeners.

Not that it's the comedian's fault—there just aren't enough new jokes born every week. In the old days, a top-flight comedian could work up a really funny routine and take it clear across the country in the vaudeville houses. He needed a new set of jokes only once or twice a year. But today—

Well, it's getting so that the only time some of us laugh any more is when the boys get balled up in their lines.

Rubber Mallet

D. P. Heath of Detroit Air Meter Co. tells a good story about the early days (1920) of refrigeration sales and service in Detroit.

One of the more prominent manufacturers had sold quite a large volume in the Detroit area (at least six or seven hundred units), and had also sold two boxes in Toledo.

Of the two Toledo units, one was giving the owner a great deal of trouble and a service man was dispatched from Detroit. The owner watched this service man attack the complicated contraption with a great deal of interest, and noticed that all the service man really did was to tap the head of the compressor with a rubber mallet, thereby releasing a valve that was stuck.

Later the Toledo owner received a bill from the refrigerator company covering one service call to Toledo, \$17.50. The owner sent his check promptly, the story goes, with the following note:

"Gentlemen:

"Inclosed find my check for \$17.50 covering service call on my refrigerator. Also inclosed is my check for \$1.50 which I trust will cover the cost of mailing one rubber mallet, so that after this I can fix the thing myself."

Edison Electric Institute To Concentrate On Sales and Public Relations At Conclave

(Concluded from Page 1, Column 5) and fall campaigns on these appliances. Other private committee meetings also are scheduled during the convention days. Announcement of the bureau's program is expected soon after the convention closes.

Open sessions of the convention will start on June 7. C. W. Kellogg, E.E.I. president, will speak on important problems confronting the industry, after which W. H. Sammis, vice president of Commonwealth & Southern Corp., will outline the sales approach to two problems: meeting competition, and directing sales effort toward the profitable load.

"Stones for David's Sling," a discussion of advertising and publicity as components of the public relations problem of the industry, will be presented by H. S. Metcalf, West Penn Power Co., and Harry A. Snow, controller of Detroit Edison Co., will discuss and analyze electricity sales.

At the afternoon session, B. S. Rodey, chairman of the general accounting committee of the institute and associate controller of Consolidated Edison Co. of New York, Inc., will outline "Possible Accounting Economies." D. M. DeBard, chairman of the institute's general sales committee and vice president of Stone & Webster Service Corp., will talk on "Building for the Future in Residential Sales."

Third speaker at the session, A. H. Kehoe, vice president of Consolidated Edison of New York, will speak on the "Cost of Plant," and

J. E. Davidson, final speaker on the program, will outline "Ten Ways to Make Your Customers Like Your Company."

At the morning session on June 8, John P. Hogan, chief engineer for the New York World's Fair, will tell E.E.I. members about that event, and J. Franklin Bell, vice president of the Golden Gate Exposition, will talk about the San Francisco fair plans.

"Customers and Service" will be discussed by W. H. Harrison, vice president of American Telephone & Telegraph Co., and Ward Harrison of General Electric Co. will discuss the place that fluorescent lamps may be expected to take in the lighting field in the near future.

At the annual banquet on the night of June 8, winners of the George A. Hughes, the Curtis, the Thomas W. Martin, and National Water Heating Council prizes will be announced and the awards made. The Byllesby, Forbes, Lindemann, and McGraw individual prize awards will be made at the opening of the final session of the morning of June 9.

On the same program, Dr. Virgil Jordan, president of the National Industrial Conference Board, will discuss the outlook for private enterprise in America; and Dr. W. W. Cumberland, partner of Wellington & Co., will speak on "The Future for Financing of Private Enterprise."

The convention will close with the introduction and installation of new institute officers.

Dekker Directs Sales Of Brunner Division



H. S. DEKKER

(Concluded from Page 1, Column 3) for two years with that company's developmental laboratory on refrigerated bar and beverage equipment.

He left Brunswick-Balke to become associated with the Electromatic Corp., Chicago, manufacturer of control equipment. Later joining the F. H. Langsenkamp Co., Indianapolis, Mr. Dekker devoted his entire time to the sale of commercial refrigeration for that jobber.

Mr. Dekker's headquarters will be in Memphis, where Brunner maintains a central warehouse stock for southern distributors.

Nema April U. S. Sales Total 197,995 Units

(Concluded from Page 1, Column 5) 216,732 units during April, as compared with 338,124 units during the same month last year. Nema member sales in the United States only totaled 197,995 units this April, compared with 311,769 units in April, 1937.

Seventeen companies reported sales to Nema headquarters for April this year, against 15 manufacturers last year.

Lacquer exterior cabinets led porcelain exterior cabinets about nine to one in sales during the month, world totals showing 188,417 lacquer finished units against 21,714 units with porcelain exteriors. Cabinets of 5 to 7-cu. ft. capacity were most popular in the lacquer-finished units, with 6-cu. ft. models widely in the lead in porcelain units shipments.

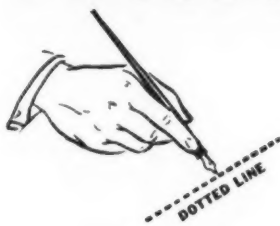
Index value of total dollar sales, based on weighted sales for 1934, 1935, and 1936, was 84.6 for April on a world sales basis, and 82.7 in the United States only.

New York, Pennsylvania, and Illinois continued to hold their lead in sales-by-states totals for the month, based on Nema reports. Ohio nosed out California for fourth ranking.

Brothers Open Dealership

JAMESTOWN, N. Y.—Lundquist Hardware, Inc., has been appointed local dealer for Westinghouse refrigerators. The firm is operated by Harold V., Paul H., and Ralph E. Lundquist.

"I HAVE
MANY OF YOUR
PROSPECTS



half sold now!"



I CAN help you close sales with many of your good prospects who have already purchased automobiles or household appliances on the Commercial Credit time-payment plan. They appreciate our friendly, fair treatment. When you talk terms to them you find them "sold" on Commercial Credit financing.

I know your local credit picture from A to Z. I know how to protect you from risky sales. I

make collections in a frictionless way that relieves you of worry or embarrassment. The resources of a great national organization are back of me, to finance all the sound business you can produce, regardless of temporary local conditions.

Every dealer who uses our service gets the complete cooperation he's looking for.

If you want to know more, I'm easy to find. I'm your local Commercial Credit manager, ready to serve you from any one of more than 200 offices in principal cities of the United States and Canada. Call me up.

REFRIGERATORS • RADIOS
RANGES • HEATING AND AIR
CONDITIONING EQUIPMENT



COMMERCIAL CREDIT COMPANY

COMMERCIAL BANKERS

HEADQUARTERS BALTIMORE

CONSOLIDATED CAPITAL AND SURPLUS OVER \$64,000,000



Serving Manufacturers, Distributors and Dealers Through More Than 200 Offices in the United States and Canada

Many Changes In Methods & Numerous Problems Of Operation Have Marked the Short History Of Locker Storage Plants

ORIGINAL purpose of the refrigerated food storage locker plant was to provide freezer-storage facilities for the storage of food products for families in rural areas, and to provide pre-cooling and processing service for meats farm-killed or killed at a slaughterhouse connected with the plant.

In the brief history of locker storage plants there have come a number of inevitable variations of this original setup, among which are the following:

Some plants are actually miniature packing houses, with facilities for slaughtering, pickling, smoking, salt curing, and sausage manufacturing.

Locker holders sometimes purchase large pieces of meat through regular wholesale channels or from farmers, or several locker holders may cooperate in purchasing carcasses.

Locker storage plants have been built in good-sized towns, with city locker renters often buying meat direct from farmers.

Proprietors sometimes purchase surplus meat from farmers, at their solicitation, and later sell it to city patrons.

Game is often stored "in season" and removed later "out of season."

EVEN 'SPECULATE'

Patrons and proprietors sometimes "speculate" by storing meats when cheap, waiting for a price rise to sell the meats at a profit.

Some locker plants are operated in conjunction with a retail store.

in family-sized bundles which are properly labeled. The packages are next placed in the sharp-freeze room, where they remain until frozen. Then the attendant places the packages in the proper locker, from which the owner removes them as needed. The locker renter has a key, and the attendant is provided with a pass key.

This procedure may be varied somewhat, of course, in the case of a city-dwelling patron, who would be more likely to buy a carcass from a farmer or even from a packing company, but the procedure once the product reaches the plant is the same.

LOCKER SIZES

In size the individual food lockers are generally of one of the three following classifications: 15 x 20 x 30 inches, with a capacity of about 150 pounds; 17 x 20 x 30 inches, with a capacity of about 200 pounds; 15 x 24 x 30 inches, with a capacity of about 250 pounds. (Some of the locker makers claim larger capacities than those given here, but in actual operation the above capacities are more nearly correct.)

Recommended temperature in the chill room is between 32 and 36° F. In the sharp freeze room the temperature kept will vary from -10° F. to +10° F., depending on the type of equipment used. In the locker rooms the temperature is usually held at 10° F.

A trained butcher is rather necessary to the operation of the plant,

What the Locker Storage Business Is All About

What is the refrigerated locker storage business? Where does mechanical refrigeration equipment enter into the picture? How are such plants operated, and what are some of the problems of the business?

The information on this page is aimed to provide general answers to the above questions, while other articles in this and next week's issue will give full details on some of the specific factors in locker storage plant design and operation.

Many other items besides meat are now being stored—fruits, vegetables, butter, eggs, etc. There has been some effort made to use refrigerated locker storages to boost the distribution of quick-frozen foods.

Typical procedure in a refrigerated locker storage plant might be described as follows:

A farmer slaughters (or preferably, has the plant operator slaughter) one of his hogs, and the carcass is properly dressed. The carcass is hung in the chill room for from 24 to 48 hours (from 10 to 14 days for beef) and is then taken into a process room, cut up, and wrapped

for he must be on hand to butcher and process the meats for the patrons. When meat is brought to the locker storage plant it is usually taken through the following steps:

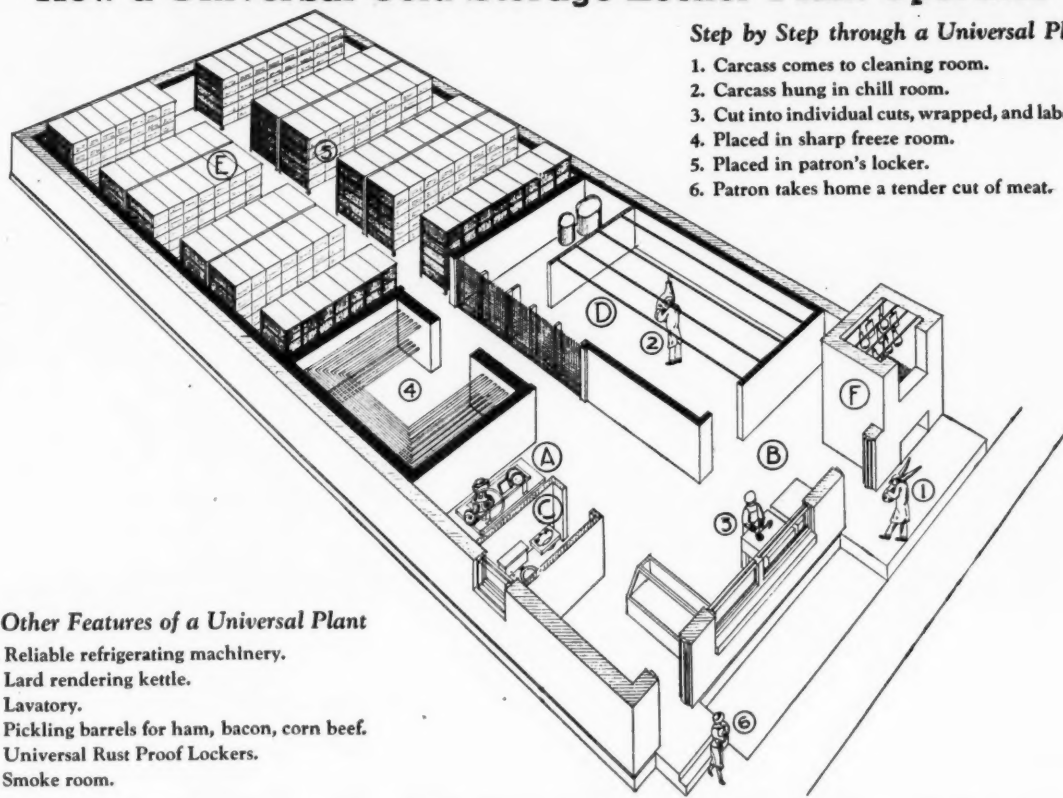
USE OF CHILL ROOM

The meat is washed and hung in the chill room to improve its tenderness and quality. Fresh-killed meat has a tendency to be stringy and quite tough, and to improve its quality it must be "aged" in the chill room for a period of one to three weeks, so that the body heat is completely removed and the meat made more palatable for consumption.

How a Universal Cold Storage Locker Plant Operates

Step by Step through a Universal Plant

1. Carcass comes to cleaning room.
2. Carcass hung in chill room.
3. Cut into individual cuts, wrapped, and labeled.
4. Placed in sharp freeze room.
5. Placed in patron's locker.
6. Patron takes home a tender cut of meat.



Other Features of a Universal Plant

- A. Reliable refrigerating machinery.
- B. Lard rendering kettle.
- C. Lavatory.
- D. Pickling barrels for ham, bacon, corn beef.
- E. Universal Rust Proof Lockers.
- F. Smoke room.

Perspective view of a refrigerated locker storage plant of the type designed by W. E. Guest & Co., Chicago engineering firm, which has designed a number of such plants.

Beef must be kept in the chill room longer than pork.

Next step in locker storage procedure is cutting the meat into steaks, roasts, and chops, with the leftovers being used for hamburger or sausage. This cutting operation is done either in a cutting room or possibly in a space provided in the chill room.

WRAPPING METHODS

Each cut of meat is wrapped individually in some kind of parchment paper, to prevent loss of weight and discoloration. (Fruits and vegetables should be placed in tin, glass, or fiber-board containers, and one-inch head space should be left for the expansion that will come with freezing.)

The packages are labeled with the name of the owner, what the package comprises, the number of the locker in which they are scheduled to be placed, and the date of the cutting.

REASON FOR FREEZING

When they have been properly wrapped, the packages are ready for the quick-freeze or sharp-freeze room. In this room the foodstuffs are frozen at low temperatures.

Freezing of the foodstuffs at such relatively low temperatures keeps the ice crystal formation in foodstuffs small, and when they thaw, the foods are practically in their original natural condition because the ice crystals will not have formed large enough to rupture the cells holding the natural juices.

The freezing process is sometimes speeded up by using forced circulation of air over the products. Foods are kept in the sharp-freeze room from 12 to 24 hours.

CARE IN PLACING

Operators should take care in placing the packages on the refrigerated coils which sometimes comprise the shelves, since "jamming up" of the packages on the shelves will result in improper freezing.

From the sharp-freeze room the foodstuffs are taken to the locker room and placed in the proper lockers. Locker rooms are usually held at about 10° F., with even temperatures being desirable. Provision

should be made in locker construction and arrangement for proper air circulation, in order that optimum storage conditions will be maintained.

With respect to removal of the packages from the locker, a number of various procedures are followed. Generally speaking, the customer has a key to his own locker and he has access to it during the plant hours, which are planned for customer convenience.

WHO PROFITS—AND WHY

What return does the locker owner get for his investment, and how does the butcher in charge make out?

In most cases a flat rate per year of something around \$10 is charged per locker. In addition to this, the locker storage operator may get 1 cent a pound for dressed meat cut and wrapped by the plant. Rate on hamburger and sausage may be slightly higher.

Then there are butchering charges which run from \$1 per head for hogs, calves, and sheep to \$2 for heifers and steers. Other charges are rendering lard, 3 cents per pound of rendered lard; curing meat, 3 cents per pound; freezing fruits and vegetables, 1 cent per pound.

What does the locker user profit by renting space in a storage locker plant?

SAVINGS TO USERS

One explanation of the savings to the user is as follows:

With the given farm price of beef cattle averaging about 7½ cents, and the equivalent dressed weight 12½ cents, the general average retail price of the same would possibly be 26½ cents. Therefore, the refrigerated locker patron might realize annual savings along the following lines:

Table Showing Estimate Of Savings To Locker User

1,000 pounds of beef at 26½ cents (retail).....	\$265.00
1,000 pounds of beef at 12½ cents (wholesale).....	\$125.00
Butchering, cutting at 1 cent per pound.....	10.00
Rental of locker for one year.....	10.00
Family of five, annual savings.....	\$120.00

In another survey it was estimated that net savings of \$44 would be realized by families consuming 600 lbs. per year; \$62 savings on a consumption of 800 lbs. per year; and \$80 savings on a consumption of 1,000 lbs. per year. (For more detailed information on savings to users, and return to owners of refrigerated locker storage systems,

patent employees; (2) odors; (3) use of poor wrapping paper; (4) inadequate methods of checking meat in and out, leaving the patron suspicious of the management; (5) rush in wintertime, and a lax season in the hot months; (6) necessity for using all cuts, including tough pieces; (7) necessity for thawing frozen meats.

SOME OF THE PROBLEMS

Some of the other sources of dissatisfaction have been: (1) incom-



CONDENSING UNITS

FEATURING AUTOMATIC BELT TIGHTENER



A-9500-WF Air Conditioning Unit for homes, restaurants, small shops, etc.

Another important M & E feature. Regulates belt tension, automatically... prevents slippage, wear and burning of belt. Saves power. Reduces wear on bearings. Used on all models 5 H.P. and up. (Smaller models are equipped with easily adjustable motor base rails.)

In M & E Compressors you will find highest quality materials and fine

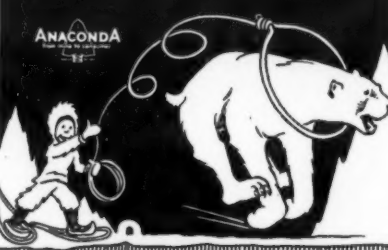
workmanship, combined with advanced engineering that has been proved in the field... you will find quality Condensing Units in types and sizes to meet your exact needs. Write for new catalog. Ask for recommendations.

MERCHANT & EVANS CO.
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M & E CONDENSING UNITS
For the Plus Values in Electric Refrigeration

Anaconda Copper Refrigeration Tubes

for difficult jobs!

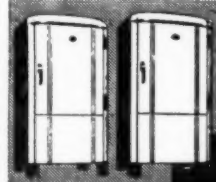


THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

TWO PROFIT OPPORTUNITIES

Copeland

Household Refrigeration



Copeland

Commercial Refrigeration



Both products of 20 years experience. Both recognized by experts as the "last word" in modern refrigeration—efficient, thrifty, long-lasting. Write today for facts about either or BOTH of these Copeland Profit Opportunities.

COPELAND REFRIGERATION CORPORATION
Sidney, Ohio

Appliance Sales Gains In Southern Cities Are Reported By Govt.

WASHINGTON, D. C.—Electrical appliances were given a major share of credit for trade gains by three cities of 36 reporting on retail conditions for the Department of Commerce's mid-May survey. In two of the cities, electric refrigerator sales were mentioned specifically as indicators of improved conditions.

Electrical appliances led in retail sales in Charleston, S. C., and registered a notable gain over the previous week in Jacksonville, Fla. Sales improvements in electric refrigerators were mentioned expressly in the Jacksonville report.

Substantial gains over the previous week in refrigerator sales were noted in Louisville, Ky.

General retail trade trends were mixed, with an equal division of the 36 cities reporting gains and losses over the previous week, suggesting that general business is neither retreating nor advancing. Opinion was advanced that if business can be sustained at the present gait for the next few months, improvement of more than seasonal nature should follow.

Bill Barring Sales Below Cost Nears Okay In N. J.

TRENTON, N. J.—A "fair sales" bill, barring advertising, offering for sale, or sale of merchandise at less than the cost, was passed here May 23 by the state senate. Previously approved by the house, the measure awaits only Gov. Moore's signature to become New Jersey law.

The governor's approval is considered a virtual certainty, since members of his party supported the measure in the legislature.

Terms of the bill prohibit retailers from selling at less than cost, and distributors from selling at less than cost plus 2% delivery charges. Although supported principally by independent grocers, the bill is so drafted as to apply to all retail trade in the state, and is therefore of prime importance to electrical appliance dealers.

Violations of the measure would be punishable by a fine of \$50, collectible by district court action. Bonafide clearance sales, sales of damaged or deteriorated merchandise, sales for charitable purposes, and sales for liquidation or under court order are not suppressed by the bill.

Quota In Pittsfield, Mass. Drive Beaten By 30 Units

PITTSFIELD, Mass.—Four hundred and thirty electric refrigerators and 48 electric ranges were sold during the six weeks' spring campaign sponsored in this territory by Pittsfield Electric Co., which closed May 9. This exceeded by 30 the quota of 400 refrigerators set for the drive.

J. F. Burt, sales manager of Pittsfield Electric Co., presided at the last meeting of the campaign, held in the East Lee Inn here and attended by 75 salesmen. Two "teams" competed for sales honors during the drive, with prizes going to the five high men on each squad.

Prize winners were Russell R. Clarke, Joseph Mauro, Robert Harrison, Jim Briggs, William Cormick, John Conry, Dominick Mangano, M. B. Dunn, Henry Jacques, and Walter LaPalm.

Dayton Refrigerator Sales Below Average In April

DAYTON, Ohio—Sales of household electric refrigerators during April were approximately 58% below those for the same month last year, according to reports of 62 dealers, compared with reports by 68 dealers for April, 1937.

For the first four months of the year, electric refrigerator sales were off 32% compared with the same period a year ago.

Sales of electric ranges, however, showed a gain for April of 20%, and for the first four months of the year were 85% higher than for the same period of 1937.

Trailer, Wired For Operation Of Appliances, Will Reveal 'Electrical Living' To Farmers

SAGINAW, Mich.—As the most effective method of making sales to farmers, who at the present time constitute the best market for appliances in this territory, A. W. Frank, Kelvinator refrigerator dealer here, is using a display trailer wired so that the appliances which it carries may be demonstrated for prospects.

APPLIANCES INSTALLED

Equipped with two refrigerators, two console radios, two table model radios, an oil-burning water heater, an electric range, a hand vacuum cleaner, and an electric iron and other small appliances, the trailer is taken on tour by Clarence Frank, the dealer's son, and Don Kubick, appliance salesman.

Present plans are for the coverage of Saginaw county, with an average of 10 or 12 "cold canvass" calls a day.

Major appliances are installed in the trailer in such a way that they can be moved easily for better demonstration.

When a demonstration is being given at a farm, a long extension cord is plugged into the electric power circuit of the farm house, providing it is standard 110-volt current.

CAN SHOW BENDIX

Thus powered, the trailer becomes a demonstration room, and the appliances can be plugged into the trailer circuit to be put in operation. Arrangement has been made so that a Bendix home laundry unit, handled by the Frank company, also may be included in the trailer display. Demonstration of the Bendix requires connection to the farm water supply.

The trailer belongs to the Saginaw distributor for Copeland Refrigeration Corp., and is being loaned to the Frank company for the farm sales promotion campaign. The major appliances displayed in the trailer are Copeland refrigerators, Philco radios, and a Monarch electric range.

Migratory Pollen Can Be Met By Conditioning

WASHINGTON, D. C.—Bedeviled not only by hay fever of the home-grown variety, but also by that resulting from pollen borne from other states, sufferers from this discomfort must look to air conditioning as about the only source of relief, says William B. Henderson, executive vice president of the Air Conditioning Manufacturers' Association.

Pollen that fell from Texas trees in January arrives in Illinois in May and eventually reaches the Canadian border, Mr. Henderson points out, causing the usual hay fever.

So hay fever victims, he explains, know no season for their discomfort.

"Hospital and clinical tests revealing that air conditioning serves to alleviate hay fever, and often to give complete relief from it," Mr. Henderson continues, "have proven useful in convincing hay fever sufferers that sleeping in an air-conditioned room or working in an air-conditioned office will add greatly to their hours of comfort and relief."

112,000 Vacuum Cleaners Sold During April

CHICAGO—April sales of vacuum cleaners totaled 112,100 units, compared to 190,536 in the same month of 1937 and a March total of 135,543, reports R. J. Simmons, president of Vacuum Cleaner Manufacturers' Association. Sales for the January-April period were 466,182 units, compared to 666,789 last year.

The association will meet Oct. 21 at Hot Springs, Va., to celebrate the silver anniversary of its founding.

C.I.T. Corp. Pays Regular \$1 Quarterly Dividend

NEW YORK CITY—Regular quarterly dividend of \$1 a share on common stock, payable July 1 to stockholders of record June 10, has been declared by directors of Commercial Investment Trust Corp.

Also declared was the regular quarterly dividend of \$1.06¼ on the convertible preference stock, \$4.25 series of 1935, payable July 1.

IMPORTANT MESSAGE TO LIVE-WIRE APPLIANCE DEALERS!

All principal markets now served by distributors.

Sensational acceptance by the nation's leading distributors since January 15, 1938 proves that the Blue Flash line opens up an entirely new market!

Beat the depression with this dual purpose food and beverage table-top refrigerator. Nothing like it in the industry. Powerful merchandising and advertising to help you sell. Big profit margin for you.

Right now is the time to get Blue Flash dealership for your city or town. The best months of year right ahead! Cash in on the Blue Flash in your locality.

WRITE or WIRE TODAY!

Dry Storage
FOR FOODS
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Wet or Dry Storage for
BEVERAGES
Bottled or Canned
•
3 MODELS MEET
ALL REQUIREMENTS
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BIG MARKET
•
BIG PROFITS



Brunswick BLUE FLASH
TABLE-TOP ELECTRIC REFRIGERATOR

**WRITE OR WIRE TODAY FOR NAME AND ADDRESS
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ADDRESS

Appliance Division, THE BRUNSWICK-BALKE-COLLENDER CO.
621 SOUTH WABASH AVE., CHICAGO, ILL.

Commercial Refrigeration

G-E Water Coolers Have New Design Features

CLEVELAND—Four models with increased capacities are featured in the 1938 line of water coolers just announced by H. T. Hulett, manager of the commercial refrigeration section of the specialty appliance sales division of General Electric Co.

The four improved models are of the pressure type, and need only to be connected to the regular city water system for operation. Model RM-43 is a popularly priced cooler with a one-piece vitreous china top. The larger models RM-53, RM-63, and RM-73 have the G-E foot-pedal control.

One of the outstanding features of the new line of water coolers is a stainless steel water reservoir, standard equipment in all models.

Other models in the line, in addition to the four improved ones, are designed for offices, factories, mills, stores, public buildings, theaters, and similar establishments. There are heavy-duty models for industrial use, and three smaller models for offices and shops.

Model RM-73 is designed especially for use in textile mills and other buildings where lint or dust might damage the refrigerating mechanism of the ordinary cooler.

There are also models built especially for cafeterias and restaurants.

Commercial Model Is Introduced By Johnson

GALESBURG, Ill.—A new semi-commercial electric refrigerator of 13.5-cu. ft. net capacity, designed for use in larger homes and for commercial use in restaurants, taverns, stores, clubs, schools, and laboratories, has just been announced by Johnson Motors here.

Like other models in Johnson's household line, the new refrigerator will be sold direct to the trade. C. A. Morrison, sales manager of the refrigeration division, said. Suggested list price of the unit is \$345.

Model J-135 is a two-door unit, and is equipped with a twin-cylinder Johnson compressor of 1/4-hp. capacity. Shelf area of the refrigerator is 22.3 sq. ft.

Exterior finish of the refrigerator is Bonderized Dulux, and the interior is finished in acid-resisting porcelain. Insulation is of Balsam-Wool, in thicknesses of 3 and 3 1/2 inches.

The unit has six ice trays, which have a capacity of 168 large cubes, or 10 1/2 lbs. of ice, at a freezing. Multiple-point temperature control is standard, with semi-automatic defrosting. Automatic interior electric light is furnished.

Dimensions of the unit are: width, 40 inches; depth, 26 inches; and height, 67 1/2 inches.

New Large Freon Units Added To Lipman Line

BELOIT, Wis.—A new line of water-cooled Freon-12 refrigerating machines has been announced by the General Refrigeration Corp. here. Available in 20, 25, and 30-hp. capacities, the new machines were designed for applications that require evaporator temperatures ranging from 0° to 50° F.

The machines have two 4-cylinder vertical single-acting enclosed-type compressors. The crankcase is of one-piece construction, and designed to hold a large supply of oil at a high level.

An automatic return valve, located in the lower part of the suction manifold, permits any oil carried over into the evaporator to automatically return to the crankcase.

Crankcase seals are of the hollow-bellows type. Sealing effect is produced by positive crankcase pressure, and by a precision spring when the machine is operating on a vacuum.

Compressor valves are low-lift, ring disc type with large port areas.

Sight glasses in the crankcase provide for inspection of oil level and condition of oil. Sight glasses in the suction manifold show whether vapor of liquid is returning to the compressor. This is said to provide an accurate means for determining the expansion valve setting, and is claimed to be of particular advantage on air-conditioning applications where evaporator temperatures are below 32° F. and no frost appears on the suction line.

Dealer Finds New Business On Farms, Replacement Sales In Small Towns

SAGINAW, Mich.—Selling commercial refrigeration, air conditioning, and stokers makes an active business at all seasons of the year for the York Distributing Co. here, asserts G. J. Gardner, manager. Formerly the Robbenolt Refrigerating Co., the concern has operated for the past two years under its present trade name.

"The commercial refrigeration business is good," Mr. Gardner said, "if you go out and get it. We can't sell all the business places in Saginaw and the small towns around. If anything, business is better in the rural areas than here in town, but we are getting a good volume from both places."

"Yes, we sell air conditioning. We are just hooking up a 5-hp. York job in the Airplane Room of the Bancroft hotel. The conditioning unit is a York BW-475, installed at the back of the room, and connected with an outlet grille near the ceiling. Return air is taken from the rear of the room through a grille near the floor."

SMALLEST JOB

"We are also getting a lot of good commercial business, and have recently installed what we believe to be one of the smallest milk cooling jobs in the country."

"In the Heffel dairy at Freeland, we installed a 1/2-hp. York machine with a forced-air cooling unit in the box. The inside dimensions of this cooler are only 5 x 5 x 5 feet. The equipment does a good job, however, and the owners are well satisfied with it."

"During the last month we have also installed a nice job for the Hackett dairy here in Saginaw. Equipment used on this installation consisted of a 1-hp. York compressor, and a forced-air unit, which keeps the box at a temperature of 38° F."

"We had a funny thing come up on this job, where we thought the owner was wrong, but the way it turned out he was pretty smart. He had an old tank in which he wanted to freeze water into ice, and said that he wanted to use the melting ice from this tank to cool his milk aerator."

"This proposition did not appeal to us, but we installed bare copper

coils in the tank just the same, to give him all the ice he wanted. The way it turned out, the owner is chipping ice out of that tank every morning to pack his milk before he goes out on the route."

"In this way the customer gets the milk ice cold, even through the summer, and there is less danger of milk souring on the porch. We thought the whole business was a fool idea at first, but we feel the owner was wise in getting enough ice for this purpose."

"Another thing we do is to replace old, obsolete, expensive equipment with modern equipment that operates with less horsepower. Take the Kinde Market job over in Caro—the ammonia compressor on that job came over on the ark—it was that old."

"For years Kinde had been paying the bills on 15 hp. to run that machine for his walk-in coolers. We figured it up with York Freon equipment, and found that 2 hp. would handle the job in great shape. You see, Kinde has two coolers hitched up on this system, and one of them is used to remove body heat from meat after it is butchered."

OWNER WAS SKEPTICAL

"It takes a lot of cooling to handle this kind of meat, and Kinde was pretty skeptical about a 2-hp. job doing the work. We have it all in and running now, however, and Kinde has to look at the 34° F. which the thermometer in the box registers several times each day, to believe his own eyes. He never thought we could do it, and was pretty skeptical right up to the time when we turned the system on."

"Also during the past month, we have installed a 1/2-hp. York Freon system with a forced-convection cooling unit for the Witte dairy at Chesaning, Mich. The milk cooling box is lined with 2-inch insulation and leaks badly, but the refrigerating equipment keeps the temperature down where it should be for cooling milk."

In addition to York commercial and air-conditioning equipment, the company also sells Capitol Rock Wool, and has just taken on the Combustioneer line of stokers. Dairy equipment supplies, butcher supplies, and Holcomb & Hoke cases are also sold by the company.

Portsmouth 'Super' Store Gets Mechanical Units For Display Cases

PORTSMOUTH, Ohio—Two 16-ft. Thesco display cases and a 12 x 10 x 10-ft. walk-in cooler have been installed by Mechanical Refrigeration Service Co. in the first of four "Super Self-Serve" markets to be opened here by J. P. Schaeffer Grocery Co., reports E. L. Minch, service manager.

Sale of the equipment was made by Delmer White of McNeer Motor Co., representative in Portsmouth for Kelvinator and C. Schmidt products.

New Delicatessen Case Introduced By Seeger

ST. PAUL—Another model has been added to its 1938 line of commercial display cases by Seeger Refrigerator Co., replacing the model 15 case formerly manufactured by the company.

The new unit, model 23, is especially adaptable to delicatessen refrigeration installations, having a main display shelf and two mezzanine shelves, and a storage compartment in the base.

There are four sizes of the new model, all featuring the new finned-type coils, 3-inch corkboard insulation, light reflector solid with top of case, "Loc-i-Tite" sliding doors with three panes of glass, porcelain exterior finish and interior lining, and three-pane display glass front.

Specifications of the four cases are:

Model	Numbers	23-6	23-8	23-10	23-12
Length (feet)	6	8	10	12
Depth (inches)	32 3/4	32 3/4	32 3/4	32 3/4
Height (inches)	52 1/2	52 1/2	52 1/2	52 1/2
Display shelf area (sq. ft.)	20.27	27.93	35.59	43.25
Display capacity (cu. ft.)	22.6	30.9	39.2	47.5
Storage capacity (cu. ft.)	13.9	18.4	24.1	29.2

Sharp-Freezer Room Will Help Meat, Berry Packers

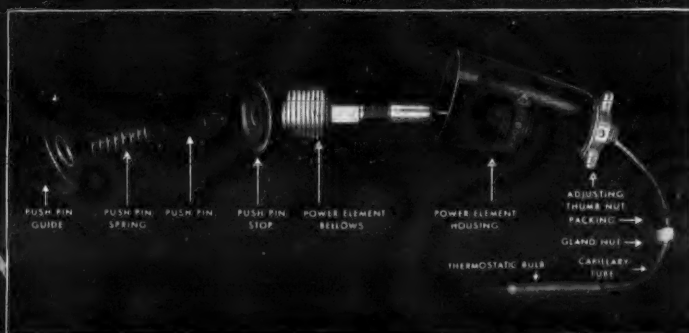
BIRMINGHAM, Ala.—A sharp-freezing installation has recently been completed here by Birmingham Ice & Cold Storage Co. Designed largely to serve meat and berry packers, the installation occupies a room 65 x 31 feet, with nine-foot ceiling.

Instead of depending on air currents in the storage room for refrigeration, the merchandise is placed in direct contact with a shelf-like tier of pipes which run around three sides of the room. Through these pipes, ammonia is constantly circulated by means of a float control. Temperature of the liquid ammonia in the coils is kept at about 25° F.

Products to be conditioned are left in this room until frozen hard, and then transferred to other freezer rooms for storage. A 75-ton booster compressor handles the low-pressure gas from the freezing coils, and builds up the pressure to that of the main suction line coming from other cold storage rooms.

Chief advantage of this room is that products may be pre-frozen before being transferred to regular cold storage space. In this way, temperatures in the regular cold storage rooms are not disturbed by having warm products moved into them, and may be kept more steady. The installation here required 6,600 feet of 2-inch pipe. Six inches of insulation is used in the floor, and 10 inches in the walls. In this case, ceiling insulation was unnecessary because of another cold storage room above.

3 1/2 minutes TO CHANGE POWER ELEMENTS



Showing Fedders Model 33 Valve being reassembled after complete change of Power Element Bellows and Tube Assembly

Another exclusive feature of FEDDERS MODEL 33 Thermostatic Expansion Valves

● 3 1/2 minutes is all it takes to change power element bellows and tube assemblies in your shop or out on the job... This exclusive Fedders convenience simplifies changing valve over for SO₂, Methyl or Freon... saves time... reduces inventory... speeds up deliveries from limited stocks... cuts time on service work. Valve body remains sealed during changeover. Proven by years of service in thousands of installations throughout the world. ● You get EXTRA VALUE when you buy FEDDERS Valves, Coils, Evaporators, Unit Coolers, Condensers, Air Conditioning Units and other equipment in the complete Fedders line.

FEDDERS MANUFACTURING CO. BUFFALO, N. Y.

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ARE YOU GETTING YOUR COPY OF THE FEDDERS NEWS?

Dealers Must Learn All About Locker Plants To Sell Them, Says Hartman

OMAHA, Neb. — Refrigeration dealers and contractors who want to sell locker storage installations that will stay sold will be wise to learn all they can about the operation of a locker storage plant, particularly from the standpoint of being able to talk with assurance about how to sell the locker idea to patrons, and how to keep operating costs low. That's the advice of F. E. Hartman, general sales manager of the Baker Ice Machine Co., which makes a pretty valid claim of being the pioneer refrigerating machine manufacturer in the locker storage idea.

A refrigerating machine dealer or salesman very often has to sell the "idea" of the whole locker storage business to a prospective operator or group of owners, and ability to talk intelligently about all the phases of the business will add everything to the salesman's chances of landing the order, Mr. Hartman points out.

COSTS MUST BE LOW

The matter of knowing how to keep operating costs at rock-bottom is all-important, says Mr. Hartman, because the extent of the profit that will be made is a great deal dependent on keeping those costs at a minimum.

How To Sell a Locker Plant Owner

To sell equipment to a refrigerated locker storage plant a dealer must know something about the locker storage business, and he can help his cause greatly if he knows enough about it to make intelligent suggestions about the operation of the business. In stories on this and page 8 are offered some hints that an equipment salesman can use.

ent on keeping those costs at a minimum.

Mr. Hartman has the following concrete suggestions to offer to the refrigeration salesman, with respect to information about operating procedure which the salesman can impart to the prospective owner of a locker plant:

(1.) Keep children out of the locker room. Kids add to the heat load, leave doors open, and run in and out, such antics sometimes running cooling costs up 50%. Also, they may antagonize other patrons, spread infection, and get colds and running noses from being in the cold room, thereby making their mothers antagonistic.

CONTROL OVER BUTCHERING

(2.) Make it mandatory that the butchering be done at the plant, or at least insist that the plant butcher do it. Farmers using the plant often try to save the \$1 or \$2 killing charge by doing their own butchering. Knowing not too much about butchering, farmers often make a mess of it, some having been known to go so far as to make a sporting proposition of killing cattle, "jumping on a horse, rifle in hand, and chasing the 'critter' into a corral to shoot it," as Mr. Hartman explains it. This means that the animal bleeds improperly, that the meat gets dark and strong, and that bone rot may develop.

Such things may not show up at once, but often develop after the meat has been placed in the locker, tainting other foods. The farmer is then tempted to claim that the meat was good when it was placed in the locker, other patrons demand replacement of their tainted foodstuffs, and the operator is faced with actual financial loss and considerable damage to his business reputation.

According to Mr. Hartman, past experience has shown that insistence on all butchering being done by the plant butcher will probably do more to eliminate trouble in locker storage plant operation than any single other factor.

'NO SMUGGLING'

(3.) Don't allow patrons to smuggle bundles of foodstuffs, not properly processed, into the locker room. Here again the farmer patron may be something of a "villain," for he may kill a fowl or two or butcher a calf, and bring in some of this freshly killed meat in a market basket, slyly pretending that he has been doing some marketing. On this pretense he may get by the plant manager and deposit the package of warm meat in the locker, taking

out another bundle from the locker.

Of course the farmer gets out of paying the processing charge, but more than that, the meat has not been properly chilled or frozen, and will run up cooling costs in the locker room. There is also a good chance that the meat will scarce be fit for consumption.

(4.) Read and abide by the game laws. In cases out of the actual experience of locker operators, patrons have smuggled out-of-season game into the locker, sometimes with the knowledge of the operator, sometimes not.

In many such cases game wardens have investigated the lockers and discovered the offense, in which case the operator, as a harbinger of illegal goods, may be fined more than the offender. Baker dealers now recommend printed leases (as shown) to release the operator on this score.

OTHER CAUTIONS

Other things that the dealer should caution the owner or operator about are the use of proper wrapping paper, and the installation of a standard, well-made locker, and not the makeshift affairs that were used in many of the early plants.

Baker Recommends Printed Lease Like This

Locker No. 193....

I hereby make application for the use of storage locker to be used by me in accordance with your rules governing the use thereof, and in consideration of the renting to me of a storage locker, I agree:

1. To rent said locker from to and pay rent thereof at \$10.00 per year, payable in advance, and additional lockers at \$1.00 per month in advance.

2. Not to violate any of the State or Federal Game or Prohibition laws in connection with the use of any storage locker.

3. To indemnify you fully and to protect and hold you harmless in case I violate or am charged with violating any of the State or Federal Game or Prohibition laws, and from Claims for Damage to goods placed in said locker or theft therefrom to indemnify and hold you harmless during the time I use said locker by reason of any violation of Chapter 134 of the 1931 Code of the State of Iowa or any violation of any Federal Statute or Act of Congress of the United States pertaining to the Federal Pure Food Laws.

4. I understand and agree that in consideration of the renting to me of said locker, there exists between (locker plant owner) and myself, the relation of Landlord and Tenant, and I agree to be bound by the laws relating thereto, and that the acceptance of this application by (locker plant owner) shall constitute a contract and the only contract existing between (locker plant owner) and this applicant.

5. Failure to pay rent for said locker promptly when due or a breach of any of the covenants contained herein, shall, at the option of said (locker plant owner), immediately terminate and end this agreement and forfeit all rights of the applicant herein to said locker and contents of the same, and the said (locker plant owner) shall have full right and authority to take immediate possession of said locker and to sell or dispose of, without process of law appraisal or notice to applicant, at public or private sale, any part or all of the contents of said locker belonging to said applicant; and the said (locker plant owner) shall at all times have the right and authority to open said locker and inspect the contents of same.

Approved:

(locker plant owner)

By.....

Applicant

Locker No. Paid for 193....

Tyler Refrigerators Used In Wrigley Field Job

CHICAGO—To cool the drinks that soothe the raw throats of the fans who flock to Wrigley Field to see and cheer the Chicago Cubs, four 30-cu. ft. Tyler reach-in refrigerators have been installed in the concession stands by R. Cooper Jr. Inc. The Tyler cabinets are cooled by General Electric refrigerating equipment.

Frozen Peach Plant Bought By Georgia Fruit

ATLANTA — The Tom Huston Frozen Peach plant in Montezuma, considered one of the finest of its kind in the country and valued in a recent inventory at \$140,000, has been purchased by the Georgia Fruit Products, Inc., of this city. The new owners will operate the plant, now idle.

Shelbyville, Ind. Group To Construct \$30,000 Locker Storage Plant

SHELBYVILLE, Ind. — Cold-Keep Storage, Inc., has been organized here to construct a refrigerator locker storage plant at an estimated cost of \$30,000.

The plant, which will be built on a down-town location, will be equipped with white porcelain lockers throughout, offered in three sizes to accommodate needs of different families.

Members of the firm, which may later branch out into the frozen foods business, are Dalton Spurlin, Charles Sullivan, R. F. Barnard, Harry Hatfield, Ralph Worland, and W. C. McFadden.

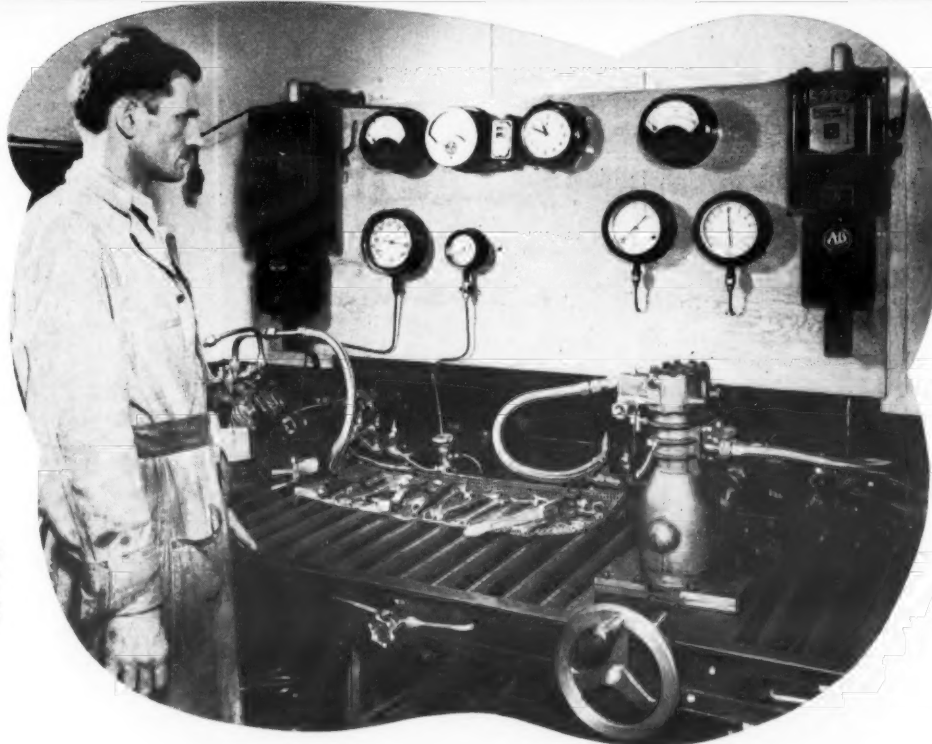
Knight & Hesse Promoted To New Positions At Stanley Knight Corp.

CHICAGO—Stanley C. Knight has succeeded Walton Sewell as secretary of Stanley Knight Corp., manufacturer of soda fountain and bar equipment, and O. E. Hesse has succeeded Mr. Sewell in active charge of the company's office, it was announced here recently.

Mr. Knight, a son of the company's president, is active in a sales capacity for the company. Mr. Hesse from 1913 to early in 1937 was connected with the Knight Soda Fountain Co., principal interest in which was held by a brother of Stanley Knight Corp.'s president, and which has recently discontinued active operations after liquidation.

67,000 Ohio Farms Now Have Electricity

DAYTON, Ohio—In rural sections of Ohio, more than 67,000 farm homes are now equipped with electric service, representing about 37% of the state's farms. Fifteen rural electrification projects are now operating in Ohio, and 10 additional projects are either in the organization stage or completed and awaiting approval from REA officials.



Every Servel compressor is subjected to a rigid performance test—for capacity—for efficiency—for quietness of operation.

FINAL EXAM!

Just as the hopeful graduate must pass his "finals" before he gets his diploma, so every Servel compressor must pass a rigid performance test before it gets the inspector's "O. K."

Pumping first pure dehydrated air, then refrigerant, the compressor proves its ability to pump a specific volume of gas against a predetermined pressure in a specified number of seconds. A watt-meter enables the inspector to detect any "tight" compressors, and a gauge

check reveals any possible valve leaks. The test is conducted in a sound-proofed room so that any abnormal noises may also be detected.

Whether you need a small refrigerating machine for a bottle cooler or a 20-ton unit for locker storage, Servel equipment and Servel engineering data will help you do a better job.

A letter will bring our catalog and further details.

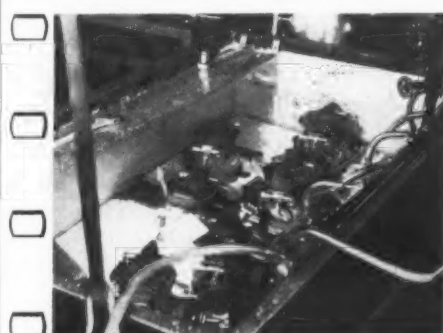
SERVEL, Inc.

ELECTRIC REFRIGERATION AND AIR CONDITIONING DIVISION
EVANSVILLE, INDIANA

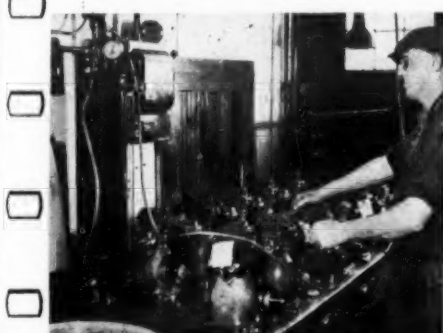
MATERIALS...MACHINES...MANPOWER



COMPRESSOR ASSEMBLY—The scores of finished parts that make up each Servel compressor meet at the assembly bench.



SUBMERSION TEST—Finished compressors are leak-tested under water with dry air at a pressure of 300 lbs. per sq. in.



OIL CHARGE—A carefully measured quantity of a special white oil is charged into each Servel compressor.

Two Michigan Locker Plants Profitable For Experienced Refrigeration Man

By Henry Knowlton, Jr.

GRAND RAPIDS, Mich.—When a man who has spent 23 years in the commercial refrigeration industry invests his own hard-earned money in the refrigerated locker business—that's an indication that he feels the business has definite future possibilities.

C. M. Lewis, manager of the Grand Rapids office of Westerlin & Campbell, York distributor, became interested in the locker storage industry when the St. Paul office of the York company reported sales of locker storage plants at the rate of five or six a week, and that well over 100 plants were in operation in its district.

500-LOCKER PLANT

When Mr. Lewis decided to take the matter over with his friend Cyrus M. Poppen, a Muskegon lawyer, he found that Mr. Poppen had become interested in the locker storage business during a visit last summer to his home near Des Moines, Iowa, where many plants are in operation. Guy Slater of Muskegon, Mich., also became interested in the project, and as a result the Michigan Refrigerated Locker Co. was formed.

The first locker storage system to be operated in Michigan was opened at Greenville, Mich., Nov. 8 of last year. This is a 500-locker plant, with 300 lockers installed at the present time. The plant is located on the main street of Greenville, in a building formerly used as an implement store. This building is about 25 feet wide by 60 feet deep.

A partitioned space at the front of the building is used as a customers' waiting room, and butcher's counters. Behind this space are the freeze and chill rooms, which measure 6 x 9 feet and 10 x 12 feet, respectively.

Temperature in the chill room is 35° F., which is suitable for removing the "body heat" from beef or other meats that have just been slaughtered.

'SHARP-FREEZING'

After the meat is chilled, it is taken to the "sharp-freeze" room, where the temperature is kept at -15° F. Temperature in the locker storage room is maintained at 15° F.

All meat is processed and wrapped before being placed in the "sharp-freeze" room. For example, if a quarter of beef is to be put in a

customer's locker, it is cut into steaks and roasts, and the balance ground into hamburger. These cuts of meat are wrapped in a parchment-type paper, which is easily peeled from the meat when it is taken from the locker in a frozen condition.

Of the 300 lockers installed in the building at the present time, approximately 120 are rented. This percentage permits the storage system to pay its own way at the present time, Mr. Lewis states. The first rentals last fall were for the storage of venison, but the customers now are farmers and townspeople. Lockers are rented for \$10 per year, or on the basis of \$1.25 per month. People who take lockers for one or two months invariably sign a lease for the balance of the year, Mr. Lewis says.

Processing charges for meat and poultry are 1 cent per lb.; for grinding hamburger, 1 cent per lb.; for grinding sausage or pork fat, 1 cent per lb.; and for making sausage in casings, 2 cents per lb. Charges for sharp-freezing fruits, vegetables, and miscellaneous items are determined by the quantity and the product to be frozen.

While the basic theory of a locker storage plant is to store meat for farmers, and for townspeople who buy what the farmers do not need for their own use, Mr. Lewis asserts that his plants are beginning to wholesale Chicago (packing house) beef to customers at 2 cents per lb. profit, and expect to do a good volume of business in this department. The type of meat handled by the locker storage system must depend on local preferences in the community.

Clair Granzo, custom butcher for the Greenville plant, has a space at the rear of the locker storage building where he butchers stock at a charge of \$1 per head for hogs and cows, 50 cents for veal, 75 cents for sheep, and does curing at 2 cents per lb. Income from this work is his own, and does not accrue to the business.

USES THE NEWS

Mr. Granzo has used a copy of the Aug. 25, 1937, issue of AIR CONDITIONING & REFRIGERATION NEWS covering progress of the locker storage industry in Iowa, to interest people in his territory in renting lockers. Showing the NEWS to his prospects, Mr. Granzo points out that it is an independent publication, and reads part of the article to them. He asserts that many new customers for his lockers have been obtained in this manner.

A display of frosted foods and

vegetables is kept on a table in the locker room to help sell the people visiting the plant the idea of storing their own fruits and vegetables. The company hopes to enter the business of wholesaling frosted foods later on.

Mr. Granzo is paid on a straight salary basis, plus what he can earn butchering and curing meats for customers. Both the Greenville plant and the Fremont, Mich., plant are supervised by Elmer Davis, who works out of the company's office in Muskegon.

ALARM SYSTEM

All keys are kept at the cashier's window, eliminating the possibility of meat entering the locker storage room which should go into the sharp-freeze room first. To remove the fear of being locked in the storage room, a system of bells has been installed for customers' use in this contingency.

Both the Greenville and Fremont plants are equipped with 7½-hp. York ammonia refrigeration systems. Coils are all 1¼-inch steel pipe, and electric operating controls have been installed to maintain the proper temperature in the different rooms.

Insulation in the two buildings is 4 inch, 6 inch, and 8-inch Palco Bark, housed in redwood tongue and groove sheathing on both sides. The existing buildings were of brick and masonry construction.

Mr. Lewis feels that prospects for the locker storage business are good, both in rural and metropolitan areas. Citing the case of a plant in South Bend, Ind., Mr. Lewis asserted that no lockers have been rented to farmers. Some operators of locker storage systems feel that the farmer is the best customer, as his family uses more meat each year than the average city family.

Both the Greenville and Fremont plants are breaking even at the present time, and the company plans to build a storage system in Grand Rapids soon, according to Mr. Lewis.

Questioned about the profits existing in the business, Mr. Lewis stated that the processing and brokerage on meat will pay for the operation of the plant, and that the revenue from the rental of lockers is profit.

Odor Absorbing Unit Uses Forced Draft

NEW YORK CITY—Consolidated Air Conditioning division of W. B. Connor Engineering Corp. has recently put on the market two types of odor absorbers, one applicable to locker storage and other cold storage rooms and the other to small rooms, kitchens, smoking rooms, and other enclosures of similar size.

Type "F" odor eliminator, the one designed for locker storage plants, is a floor-mounted unit, and is regularly equipped with a 110 volt, single phase, 60 cycle fan motor; d. c. motors are available at additional cost.

Model F-175 has a capacity of 175 c.f.m., and is sufficient to serve a room of 2,500 cu. ft. volume in which odors are average, or a room of 3,500 cu. ft. volume in which odors are light. Model F-350 has a capacity of 350 c.f.m., and will handle the average room of 5,000 cu. ft. volume, or a room of 7,000 cu. ft. volume where odors are light.

Type "W" odor eliminator also is available in two models, the first, W-100, having a capacity of 100 c.f.m., and the second, W-200, having a capacity of 200 c.f.m. Capacity of the first model ranges from rooms of 1,500 cu. ft. volume, where odor intensity is average, to a maximum of 2,000 cu. ft. where odors are light.

CORRECT COILS FOR LOCKER PLANTS

FOR CORRECT COOLING

Also makers of REMPE Unit COOLERS

REMPE CO., 340 N. Sacramento Blvd., CHICAGO

Rempe coils and pipe bends have back of them an efficiency experience of almost 50 years. That's why engineers make it a point to "ask Rempe" whenever there is a particularly tough problem of cooling, and when they want to be SURE of results. For coils or units that provide any temperature, to be used with any refrigerant, and for any size or type of installation, you'll do well to

Ask REMPE

Schedule Of Charges For Locker Plant

Michigan Refrigerated Locker Company

LOCKER RENTALS

Standard Locker\$10.00 per annum
or
\$1.25 per month

Lower Drawer Locker\$12.50 per annum
or
\$1.50 per month

SERVICE CHARGES

Processing Meats and Poultry1¢ per pound

(This includes Chilling, Cutting, Wrapping, Labeling, Sharp Freezing, and placing meat in Locker.)

Grinding Hamburger1¢ per pound

Grinding Sausage or Pork Fat.....1¢ per pound

Sausage in Casings2¢ per pound

Charges for sharp freezing of Vegetables, Fruits, and miscellaneous items will be determined by the quantity and product to be frozen.

Patrons and prospective patrons of the Michigan Refrigerated Locker Co. are given this schedule of charges for rentals, and services rendered by the plant operators.

Processing Tickets Avoid Confusion

Name

PROCESSING TICKET

..... Lbs. of

Date..... Locker.....

Processing - - - - \$.....

Wrapping - - - - \$.....

Grinding - - - - Lbs. \$.....

Curing and Smoking - \$.....

..... \$.....

Total - - - - - \$.....

PURCHASE

..... Lbs. of

..... @ \$.....

MICHIGAN REFRIGERATED LOCKER COMPANY

INSTRUCTIONS

Cuts	Lbs.
Roasts	
Steak	
Boil	
Chops	
Stew	
Hamburger	
Hams	
Bacon	
Sausage	
Leg	
Fat	

At the left is the front side of the Processing Ticket used by the operators of the Michigan Refrigerated Locker Co., and at the right is the reverse side of the ticket. Use of adequate forms and records like these will contribute much to the successful and profitable operation of a locker storage plant, experience has shown.

Air Conditioning

Artesian Well Provides Half Of Cooling For Sioux City Hotel Installations

SIoux CITY, Iowa—Four independently operating and automatically controlled central air-conditioning systems, three of which will provide year-around conditioning, are being installed in Sioux City's most popular and second largest hotel by D. K. Baxter Co., distributor for Delco-Frigidaire equipment in this territory.

The contract follows up the initial step of Epply Hotels Co., operator of a large midwest hotel chain, to provide year-around comfort in the Martin hotel here. That first step was taken last year when the Baxter company installed summer and winter air-conditioning equipment for the hotel's pharmacy and taproom.

Divisions of the hotel now being conditioned and the air volume and refrigeration to be provided each by the independent systems follow:

ARTESIAN WELL

Sixty-five of the nearly 250 guest rooms, that is, all guest rooms on the fourth and fifth floors, 30 tons, 8,800 c.f.m.; the dining room off the main lobby, 12 tons, 3,000 c.f.m.; the ballroom off the mezzanine, 35 tons, 8,800 c.f.m.; and a group of three meeting rooms off the mezzanine, 6 tons, 2,000 c.f.m.

An outstanding feature of the new installations will be the use of an artesian well, drilled for the hotel in 1936, to provide by pre-cooling one half of the 75 tons of refrigeration per day to be supplied by three of the systems. Total refrigeration of all four systems will be more than 80 tons. Total air delivery will be 22,600 c.f.m., and outside air will be added at the rate of 10,000 c.f.m.

The overall expenditure for the project has been estimated at \$40,000. Approximately \$30,000 will go to the Baxter company for engineering and conditioning equipment, an additional \$6,000 for plumbing, heating, piping, wiring, and sheet metal work, and the remaining \$4,000 for redecoration following completion of the installation.

Water from the artesian well, which also provides tap water for the hotel, will be pumped by a deep well turbine, installed when the well was drilled, into a 2,000-gal. storage tank in the basement. The tank water will be kept under 35 lbs. pressure.

ROOMS PRE-COOLED

Pre-cooling water will be used in the guest room, dining room, and ballroom systems. Meeting rooms will be mechanically cooled entirely.

Ballroom plans, for example, allow for four outside air changes per hour and a load of 450 persons and the lights, walls, and windows. Of the 35 tons to be supplied the ballroom, water cooling will take care of 17.3 tons by use of 45.5 g.p.m. of water. Water for guest room cooling will be supplied at the rate of 39 g.p.m. and for the dining room at 21 g.p.m.

J. B. Russell, chief engineer of the Baxter company and a graduate of the General Motors Institute of Technology, Flint, Mich., said that all recirculated and fresh air will be drawn through spun glass filters manufactured by Owens-Illinois Glass Co., Toledo, Ohio.

Common to each system will be individual piping for water and refrigerants and separate Delco-Frigidaire compressors, installed in the basement. All refrigerant coils will be of the direct expansion, finned,

Freon type. Heating coils and humidifiers in three of the systems will furnish winter conditioning for the dining room, ballroom, and meeting rooms. Guest rooms will continue to depend entirely on a steam radiation system for heat.

All conditioning temperatures for both winter and summer will be regulated by Minneapolis-Honeywell automatic controls. Rigid insulation of fireproof wall board will be used for all ducts except those for the guest room system, for which Ozite sound insulation will be used.

Halls will serve as return ducts for guest room conditioning, operation of the cooling effect being governed by a single thermostat which will be regulated by return air temperature in the fourth floor hall. Ducts will go down the center of hallway ceilings and will be hidden by false ceilings.

VOLUME CONTROL

Conditioned air will enter each guest room through a Santrol volume control register above the door, the air volume to be regulated by the occupant according to his opinion of ideal weather. A Site-Tite grill, manufactured by Tuttle & Bailey, Inc., New Britain, Conn., will return air to the hall through the lower panel of the door.

Ducts for the meeting rooms will be concealed by running them through the furred space between the ceiling and the floor above. Redecoration will be necessary to cover the ductwork which will be exposed on the ceilings of the ballroom and dining room.

Direct-Expansion, Cold Water Coils Are Used To Cool Dept. Store

SOUTH BEND, Ind.—Direct-expansion cooling coils, operating in conjunction with cold water coils, proved a solution for air conditioning the J. C. Penney Co. store here at a considerable saving over other methods, according to Trane Co. engineers.

An analysis of city water in South Bend revealed that early in the cooling season the temperature was in the low fifties—rising gradually to 60° during the summer.

To obtain the maximum efficiency from the air-cooling equipment, the waste cooling water is diverted to a 2-inch deep spray pond on the roof, which materially reduces the inside load by lessening the sun effect.

Two Trane air-conditioning units are used to serve the first floor and basement of the building. The basement unit provides 5,000 c.f.m. of conditioned air, and water coils in the unit handle 4.6 tons of the 10-ton load, while the balance is carried by direct-expansion coils. Outside air supplied to the basement is 27½% of the total air circulated.

The first floor cooling load of 30.8 tons is handled by a 12,000 c.f.m. Trane unit, utilizing 33% fresh outside air. When the cooling water reaches its maximum temperature during summer months, the water coils handle 16 tons of the load, and the remaining 14.8 tons are taken care of by direct-expansion coils.

One 20-ton compressor operates on both systems, and automatically circulates the refrigerant as the system demands. During the early part of the season, the water coils alone are enough to provide the requisite amount of conditioned air.

Winter heating for the building is provided by hot water coils in the conditioners, augmented by Trane unit heaters.

Air-Conditioning Consultant Sets Up In Elgin, Ill.

ELGIN, Ill.—C. W. Blanpied, M. A., has established an office in the Professional building here to give consulting engineering service in air conditioning.

Traders & Employees In Chicago 'Pit' Escape Winter Colds Due To 8-Year-Old Conditioning System

CHICAGO—Thanks to air conditioning, Chicago Board of Trade members and employees have come through another winter and spring with a health record of practically 100% freedom from pneumonia, influenza, and common colds.

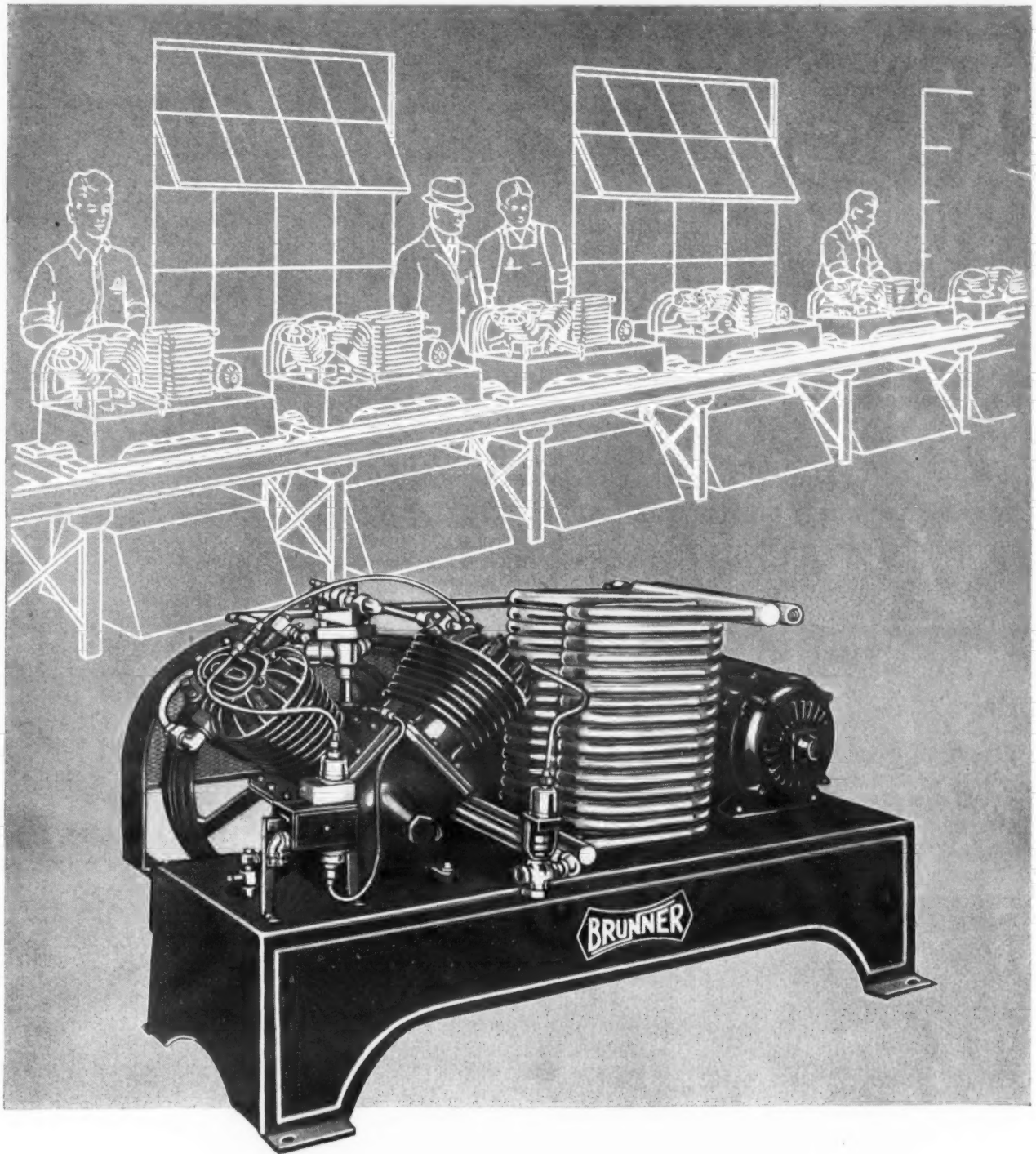
Exposure to respiratory diseases is at its maximum in "the pit," heart of the world's grain trading, where

some 800 buyers and sellers crowd close to each other for hours at a time.

Efficacy of air conditioning as a guardian of health is attested to by the operation of the system installed in the Board of Trade's trading hall and executive offices, says Peter J. Niemann, exchange hall supervisor. "Many of the traders stand close

to giant windows, often swept outside by icy air," Mr. Niemann says. "Special ducts discharge warm air against these. Scores of private telephone users work at one side of the room. Other ducts supply air without discomfort to them."

"The whole system cleanses the air, adds or removes moisture as needed, warms or cools the air, and circulates it. On the old building trading floor there were heat prostrations every summer. We have had none here in the eight years' use of our year-around conditioning system."



THE ALL-IMPORTANT "TRIAL RUN" IS UNDER THE EYES OF EXPERTS

Condensing units are like human beings in this respect: during the first hours of existence they need the care and attention of specialists. That is why the Brunner assembly and run-in is so elaborate. Every last detail of construction is checked while the unit operates under actual service conditions. Alignment of all parts—shaft, bearings, pistons—is made certain. Valves are studied for quietness and for seal. The lubrication system checked. Then—if the unit in final tests measures up to the Brunner requirement for refrigerating efficiency—it receives the Brunner nameplate and is ready for the "firing line" of duty...Why not get the whole Brunner story? See how Brunner engineering has put mechanical refrigeration on a more dependable basis. The Brunner line comprises Brunner Refrigerating and Air Conditioning equipment, air and water cooled, from ¼ to 15 H.P. Catalog on request. Brunner Manufacturing Company, Utica, N. Y., U. S. A.

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- Vibration Free
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- Genuine Walnut Cabinet
- Coils, Filters, De-Humidifiers

W. D. ALLISON COMPANY, Indianapolis, Ind.

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The Bright Spot: Commercial

PRODUCTION lines may be idle on some types of refrigeration equipment, but not on commercial. That is one phase of the business which seems to be going strong, and which shows no signs of a let-down.

True, industry statistics reveal that total production of commercial low sides is well down from 1937 figures. But from individual reports (no total figures are available on cabinet production) the manufacture and sale of many types of refrigerated cases is up this year.

Reason for this apparent anomaly is that there was a large stock of compressors already on hand, to which was added a considerable volume of repossessions and trade-ins. Inasmuch as cabinet makers generally manufacture and ship to order, rather than to a production schedule, they entered the year with clean hands, and were ready to go to town when the opportunity presented itself.

'Super Markets' Offer A Lucrative Field

Chain store expansion seems to be accounting for quite a share of the commercial business this season. As an answer to the new taxes on chain store units, the chains are going in for big super-markets, and are closing down many of their smaller units.

The super-markets are all elaborate affairs, and call for new equipment, and plenty of it. One of the current developments in the case field which appeals to this trade is the two-way service and display case—which has equal display on both sides, and is designed for installation on central aisles.

Appearance of these big super-markets in a community, of course, usually stimulates more commercial sales to competitors.

Dairy Stores Increase

Another expanding field which calls for refrigeration equipment is the dairy store. Now that the ice cream business is going more and more to packaged goods, and the counter freezer is making great inroads on the trade of ice cream manufacturers, the big dairies are opening up bright new retail establishments, and are going directly to the public with their products.

Locker Storage Boom Has Awakened Industry

New uses account for a considerable portion of the good volume being enjoyed by commercial refrigeration sales organizations. The leading new development is locker storage, which is covered in considerable detail in this issue of AIR CONDITIONING & REFRIGERATION NEWS.

Quick-frozen foods are not new, but they are having a revival. Eight or nine years ago, the refrigeration industry was all agog over this new contribution to food marketing, and spent thousands of dollars in equipment development work.

Then the little boomlet died down, and little more was heard from it. Producers narrowed down to one (Birdseye), which confined its distribution to the East, and which rented cases to retailers.

Frosted Foods Starting To Make Strides

But today many producers are in the picture, and distribution is widespread. Again there is a chance for the distributor to sell low-temperature equipment to retailers of quick-frozen foods. The well-type (sometimes called table top or lift-lid) case is the leader in this field.

Some rather sharp differentials in the distribution of commercial refrigeration business have been noted this season. Some manufacturers and distributors are "down"; others can't keep up with orders. In nearly every case, those who are getting the business are the ones who are doing aggressive promotion jobs.

Item

OBSCURELY nestling at the bottom of page 16 is a brief item noting that the first air-conditioned train in India recently made its maiden run between Agra and Delhi.

This news may not seem particularly important to American readers, but to some portions of the world, it has vast significance. Air conditioning is making the tropics habitable for the white man.

Two years ago the editor of the News rode from Delhi to Agra on a day that registered 118° F. in the shade. It was the dustiest, dirtiest, swelteringest, most acursedly uncomfortable experience of his life; and, like many another traveler, he resolved that India was not for him.

Seated in a first-class compartment was an English army officer, who had to make the trip several times a year. As the train rolled out of Delhi, he took a bottle of Scotch out of his duffel bag, and proceeded to drain it as fast as he could.

He had learned from experience, he explained, that the only way

They'll Do It Every Time . . . by Jimmy Hatlo



he could survive the trip was to get dead drunk in the first 50 miles.

Experiences like these have prevented capable men from devoting their energies and talents to the development of tropical lands. Those who have braved the hardships often emerge broken in health and spirit after a few years. Air conditioning is literally a gift from heaven to those who have interests in many parts of the world which hitherto have been the almost exclusive domain of dark-skinned races.

QUOTED

The End Of the Dream

It would be hard to describe the National deterioration of the last five years more ominously than former Comptroller General John R. McCarl does in this sentence:

"We have been moving steadily away from self-government and toward a super-state, growing weaker and weaker in self-analysis and self-discipline, in self-reliance and self-respect, each day more dependent upon government."

We as Americans have only ourselves to blame because this is true. We haven't even the doubtful consolation of knowing that our trouble has come upon us as the result of some great and irresistible misfortune. For it hasn't.

The depression of 1929 was bad. But our stalwart fathers would have laughed at the idea of knuckling under to it and finding in it excuses for failure.

They would have tightened their belts and stood up to the depression and licked it. But most of us were too soft, too much enamored of our ease and comfort, and too selfish to do anything of that sort, and by meeting our troubles squarely end them.

Instead, we ran howling in droves to Washington, and when an honest Administration talked facts and undertook to use reason in handling the crisis, we turned it out in favor of one that was pleasantly expert at manufacturing phrases, concocting promises and making vacuity look like substance.

By the millions we turned away from sense and reason to listen to crooners and flatterers, to visionary schemers and communistic theorists, to professional trouble makers, tricksters, confidence men and liars.

We became Esaus. Multitudes of us madly applauded designing men who sneered at our free institutions, our traditions of personal liberty and our Constitution and told us this was all outdated.

We were willing to sell almost anything for a fake "security."

We even swallowed the insane

teaching that a person or a nation can make itself solvent and prosperous by throwing away its wealth.

We acted like a pack of inexperienced, emotionally unstable children, unable to tell right from wrong.

In a blind eagerness to be taken care of, instead of taking care of ourselves, we made ourselves believe that for once the easy way would not turn out to be the hard way.

But it has, it was bound to; and now at the end of the ride, we find ourselves dropped into a deep, steep pit with slippery sides.

The New Deal Administration having led us to this, and having exhausted its imagination, has no rescue rope to throw.

It has nothing to offer except the old promises, the old lures, and the old tricky and impossible schemes wrapped up in slightly different phrases and tinsel.

At the conclusion of five worse than wasted years we at last begin to realize that those who get help are those who help themselves, not those who lean and yearn.

We are beginning to understand that if we are to get out of our troubles and once again become a prosperous, self-respecting and self-governing people we must shake off Rooseveltian delusions and see what we can do for ourselves by exerting the remnants of moral strength, self-reliance, judgment, brains and manhood remaining to us after prolonged enervation and a sickening final plunge.

The almost certain alternative to such an awakening will be final subjection to totalitarian superstate which Mr. McCarl sees looming on the National horizon.—The Detroit Free Press.

LETTERS

Imperial Brass Omitted From Tool Maker List

Imperial Brass Mfg. Co.
1200 W. Harrison St., Chicago, Ill.
Sirs:

We wish to refer you to the service letter written to you by Samuel Dean, a service manager, which appeared in the May 18 issue of AIR CONDITIONING & REFRIGERATION NEWS. Your reply to this inquiry showed a list of the various manufacturers of flaring tools, our name being omitted.

If your company had referred to the "1938 Refrigeration & Air Conditioning Directory," they would not only have seen that our company was listed under flaring tools but that in addition we had a full-page advertisement featuring our various tools on page 159.

As leaders in the manufacture of flaring tools and other copper tubing service tools, we regret very much that our name had not been listed.

C. H. BENSON

Answer: We regret very much the unintentional omission of the name of the Imperial Brass Mfg. Co., as well as several other manufacturers of flaring tools, in the list given in the answer to Mr. Dean's inquiry.

The list was, of course, taken from

the "1938 Refrigeration & Air Conditioning Directory," but due to a clerical error on the part of the copyist, part of the list was omitted. The error got by both the copyreader and proofreader, for which negligence we can but apologize with the reddest of faces.

Hatlo's Humor Hits Homer With Him

A. G. Innes
Galt, Ontario

Publisher:

Congratulations on your latest addition to the News . . . the comic strip in person. It certainly has hit the nail on the head—as the saying goes.

A. G. INNES

Appliance Book Found 'Useful & Interesting'

R. Cooper Jr., Inc.
General Electric Distributor
444 Lake Shore Drive, Chicago, Ill.

Editor:

Replying to your letter of April 21 addressed to Mr. Cooper. We have received and read over your booklet—"Appliance Selling Today."

I believe it has been gotten up in a very useful and interesting manner. We note that you are giving this booklet as a premium to old and new subscribers.

R. T. CRAGG,
Advertising and Sales Promotion.

'Excellent Treatise'

General Refrigeration Corp.
Beloit, Wis.

Editor:

Some time ago you published on your editorial page an excellent treatise on free publicity. The writer was very careful to preserve that particular issue for future reference. A few minutes ago I tried to locate it and found that it had vanished from its accustomed hiding place.

I'll be mighty grateful to you if you will dig around among your past issues and send me a copy of the issue in which that editorial appeared. I am enclosing 25 cents in stamps which I assume will be sufficient to cover the necessary charges.

D. G. FIFIELD

Sneath Glass Co. Omitted In Listing

Sneath Glass Co.
Hartford City, Ind.

Editor:

We notice on page 19, inquiry No. 3243, in the May 11 edition of AIR CONDITIONING & REFRIGERATION NEWS, an inquiry from a manufacturer's export manager, asking for a source of supply on water bottles, with faucets attached, and we note that you have referred them to the Jeanette Glass Co. and the McKee Glass Co. with no mention of our company.

We have manufactured more of these water bottles for the electric refrigeration trade by far than any other company. I do not believe that any other manufacturer has supplied to the refrigeration manufacturers themselves, any water cooler of this type, except our own.

H. H. CRIMMEL,
Treasurer

An 'Editor On Wheels' Finds Lincoln, Neb.

Some time ago Editor George Taubeneck wrote a column—highly popular among readers—appearing in REFRIGERATION NEWS under the title "An Editor on Wheels," in which he presented his impressions of the major cities of the country visited on business trips. He wrote similar stories about cities all over the world during his world tour.

One of the cities he missed in his "Editor on Wheels" series was Lincoln, Neb. When he visited there recently to "be in on" the launching of the "National Salesman's Crusade" by Kelvinator, he was so moved by the atmosphere in the Nebraska capital that he wrote the story which appears on this page.

Lincoln, Nebraska

When Kelvinator executives selected Lincoln, Neb., as the site for their test campaign on the National Salesman's Crusade, they were seeking a typical American city. But they got much more:

Lincoln is a truly American city. After you've been there awhile, you're proud of your United States citizenship. For here is character—municipal character, commercial character, and (most important) individual character.

To those who are becoming more and more disconsolate at what they see in the American scene, a visit to Lincoln would be a tonic. After the welter of militant radicals, confused liberals, and bewildered conservatives who haunt our eastern cities, the staunch sons of pioneers who still live according to the American Plan in Lincoln are at once a relief and an inspiration.

You see no foreign faces in Lincoln. They're all fourth and fifth generation (or better) Americans. Big men and strong, buxom, ruddy-cheeked women, children who walk erect in the sun—it's a sturdy race of rugged (yes) individualists. Their ancestors migrated from the Eastern seaboard, and their stock is predominantly early American.

And their philosophy matches their physiques and their surroundings. True, Lincoln harbored William Jennings Bryan. Greenbackers and Populists flourished here. But Lincoln down through the years has been a stronghold of pay-as-you-go, take-care-of-your-own, trust-in-God-and-keep-your-powder-dry individualists. "The Lord helps them who help themselves" might well be the town's motto.

Physically, the city has much to recommend it. With a population of 80,000, the city has all the modern facilities one could want in a metropolis, without any of the noisy or dirty drawbacks.

There are no slums. Air is clean. Homes have ample grounds, embellished with flowers and trees. Streets are wide. Distances are short. (From the heart of the city to the outlying country club is but seven minutes by automobile.)

Coming in from the airport (just 10 minutes from the leading hotel) you drive through farmlands on which bronzed strongmen are busy with tractors and cultivators. Yet the modern skyline seems so close you'd bet you could hit it with a well-shielded rock.

Cozily nesting in a natural basin which protects it from tornadoes, with no large waterways to rise over banks and flood the streets, surrounded by exceedingly fertile land, Lincoln has had the opportunity to grow peacefully. Summers are short and hot; winters are short and cold.

Skyscraper Capitol

Dominating the entire scene is one of the architectural gems of the world—the skyscraper state capitol building.

Rising sheerly out of the plains, the vertically ridged central shaft shoots up 400 feet from the generously proportioned square which is its base. Out there, with nothing around it to fight for your attention, you'd think you were looking at New York's Empire State building set on top of Chicago's Merchandise Mart.

It cost \$10,000,000; and when it was finished, it was paid for—in full!

Ten years after Governor McKelvie and Marshall Joffre of France broke the ground (April 15, 1922), it was dedicated.

At night floodlights cast brightness upon the white Indiana limestone, and visitors as well as Nebraskans feel like singing: "Mine Eyes Have Seen the Glory."

Architect was Bertram G. Goodhue; the sculptor was Lee Lawrie (his bronze "Sower" tops the shaft); and the designer of the symbolic mosaics inside was Hildreth Meiere. No prouder monument could they leave.

Happily, the building is not ornate. It depends on striking simplicity for effect, plus contrasting whiteness and shadow to gladden the eye of the photographer.

Moreover, it is efficient and useful. Every office is an outside room. Its vaulted rotunda is an artistic (media: sculpture and mosaics) representation of the history and forces which have made Nebraska. Groups of schoolchildren come daily from all over the state to study it.

In its proud functionalism and its impressive uprightness, it symbolizes perfectly the pioneer spirit and the individualism of Nebraska's inhabitants.

It's a surprise to many people when they learn that Lincoln is quite a literary center. But look at the record:

Willis Cather went to school there, and made Lincoln the setting of "My Antonia." Edwin Ford Piper and Louise Pound were also University of Nebraska students.

Mignon Eberhart, popular writer of detective fiction, was graduated from Nebraska Wesleyan. Fred Ballard, the playwright, J. Harris Gable, the bibliographer and boys writer, John Niehardt, the poet, Lowry Wimbly, the ballad authority and short story writer, are other literary Lincolniters.

Most currently famed Lincoln writer is Mari Sandoz, whose "Old Jules" was such a sensation, and who still lives in and writes about the Nebraska scene.

Turning from literature to music,

the A Capella choir deserves mention, for it is widely known throughout the United States. But while its music may have universal appeal, the choir is typically a Nebraska organization. It rents its own studio, owns all its own equipment, pays its own way, has no constitution or by-laws, imposes no fines.

As for sports, Lincoln is strictly a football town. The University of Nebraska year in and year out produces some of the nation's finest football teams. Believe it or not, there is no subsidization of athletes. It isn't necessary, because they grow 'em big and tough out there in Nebraska, and there are few other schools in the state to compete with the university for the annual crop of high school gridders.

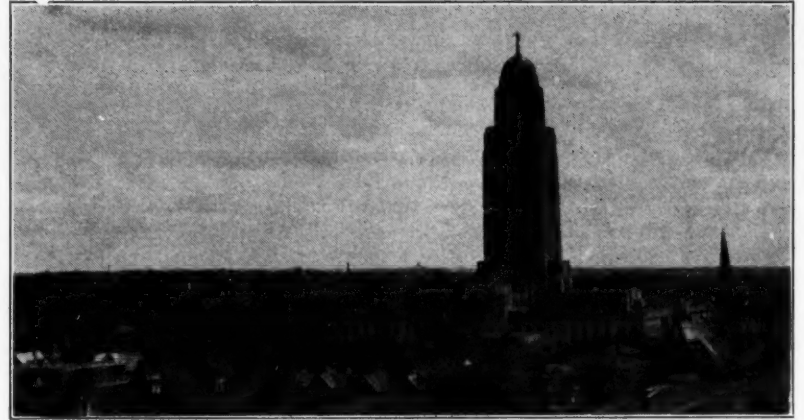
Proselyting from out-of-state schools meets with little success. Most Nebraska boys have had their hearts set on the university from their rompers days.

Lincoln really goes crazy during the season, and particularly so at game times. Football is not only the chief—it is practically the only—conversational topic. It provides by far the most excitement, the biggest emotional stimulus, that the citizens get during the year.

According to a 1937 report, resources of over \$68,000,000 are maintained by Lincoln's home office insurance companies, which makes Lincoln the Hartford of the West. In addition to these home offices, many of the nationally known old line and mutual companies maintain district agencies here.

Nebraska's greatest natural resource is her soil; the crops are the

Skyscraper Capitol



Jewel of the Lincoln, Neb., landscape is the handsome edifice pictured above, which is the State Capitol. Typical of Nebraska, by the time it was built it was all paid for.

raw materials. The varying altitude and climatic conditions from east to west are well-nigh perfect for the growing of crops.

Nebraska ranks first among the states in the production of hay; second in winter wheat, alfalfa, sugar beets, swine and all live stock.

Seventy per cent of Nebraska's farm income is from live stock. She has some of the largest creameries in the world, placing fourth in the manufacture of creamery butter. The poultry industry is also of considerable importance.

Lincoln serves, in addition to Nebraska, the northern part of Kansas, the eastern part of Wyoming and Montana, and the southwestern part of South Dakota.

This market is dominantly rural, being made up largely of substantial farmers and residents of towns and small cities. A recent census of wholesale outlets in Lincoln indicated that 197 separate jobbers were located there.

There are two farm customers to each one who lives in town. Because of the low rate of illiteracy in Nebraska (1.2%), all potential customers readily comprehend good advertising.

Present industries of Lincoln include the manufacture of food and kindred products, textile and products, concrete, stone, and clay products, metal work, chemicals and allied products, machinery, forest products.



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FREE... 56 pages of valuable information on the lubrication of refrigerating equipment. Write for your copy. Contains table showing the proper grade to use with each type of refrigerant.



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Prompt deliveries assured through 2108 warehouse plants throughout the United States.

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Design Factors For a Locker Plant Using A Low Pressure Refrigeration System

By Alfred H. Richard

MANY of the newest practices in the refrigerating of a locker storage plant have been used in the installation for the refrigerated locker storage house just completed in Cuba City, Wis.

The plant in Cuba City carries out all the typical functions of a locker storage plant, except that no slaughtering of the animals will be done at the plant. Instead, the operators of the plant are providing themselves with equipment to do the killing for the locker user on the farm.

room (maintained at from 35 to 40° F.) until properly aged, and while waiting for the operator to process same. The chill and aging rooms also act as a "reserve" for the plant to absorb peak loads in rush season.

The meat is then taken to the processing room where it is cut into family size cuts, weighed, wrapped in parchment paper, marked with owner's name, date, identity of contents and weight, and number of cuts or pieces in the package. The processing work is all handled by the plant butcher, for which the

Engineering Data For a Locker Plant Job

Alfred H. Richard is a refrigerating engineer who was active in the design and installation of the recently completed refrigerated locker storage plant in Cuba City, Wis. The refrigeration equipment was installed by Mullen Bros. Co., Dubuque, Iowa, dealer.

In this, the first of two articles about the Cuba City plant, Mr. Richards describes the layout of the building and the functions of the various rooms, discusses critically some of the various types of refrigeration systems used in locker storage plants, and then gives the load calculations and equipment selection conditions and considerations for each of the different cold rooms that make up the Cuba City plant.

In next week's issue Mr. Richards will take up the matter of how the refrigerant piping was installed, the use of temperature controls in the system, the way in which various piping connections and valve arrangements were made to permit the use of hot gas defrosting, and other details of the actual installation.

Mr. Richard's views on what equipment and type of installation are best in locker storage plants are, of course, his own, and not necessarily those of the NEWS.

A truck equipped with the necessary implements and scales will go to the farm upon request, slaughter the livestock, weigh the carcass, and transport it to the plant properly covered to protect it against heat and grime on the road.

The meat or produce is brought into the plant in whole carcass form, in quarters of beef, halves of hogs, calves, lamb, or poultry. The product is weighed in by the operator, identified by tag, and placed in the chill

client is charged on a per poundage basis.

Locker operators will be wise to lay down a strict rule that not a single package goes into the locker room without having been properly processed, thereby eliminating possible contamination of other products.

In many plants, particularly those installed in the early days of locker storage history, an ammonia refrigeration system provided the necessary cooling. Steel pipe coils with

gravity air circulation were generally used, and pipe shelf coils were employed in the freezer room. One compressor usually served the entire plant.

In some plants of such design insufficient coil surface resulted in extreme temperature differences between the refrigerant and room temperatures, causing compressor inefficiency, higher operating costs, dehydration of the product, and in some cases bone rot.

If ammonia is used with pipe coils the compressor is selected having a suction temperature of -15° F., and a back pressure regulator valve is used to maintain the required temperature in the coil of the warmer chill room, if one condensing unit is handling the entire job.

With ammonia systems the chill room is kept at 35° F. while the freezer is held at -5 to -10° F., and the locker room at 10 to 15° F. Check valves are put in the refrigerant lines to prevent the flow of refrigerant from the coils in rooms kept at warmer temperatures to the coils in rooms maintained at the lower temperatures.

Many of the plants constructed recently have installed systems employing methyl chloride or Freon as the refrigerant, and putting in two or more condensing units. One of the condensing units generally handles the freezing and locker rooms (which in these plants are kept at the same temperature), and the other compressor takes care of the chill room, aging room, and vestibule.

FORCED-DRAFT COOLING

In such plants forced-convection cooling units are generally used in all rooms but the vestibule. Advan-

tages claimed for the forced-convection units are faster freezing of the product, proper circulation of air through all the locker boxes, with a resulting better quality of product maintained in storage.

If an ageing room is included in the plant, the cooling load calculations for it are the same as for the chill room, with the exception that the product load is omitted, since the meats have already been pre-cooled. Also, door losses can be eliminated if the entrance door is from the chill room, as is the case with the Cuba City plant (see Fig. 1).

FREEZER ROOM EQUIPMENT

Most of the earlier plants had ammonia steel pipe coils laid out as shelves along the walls, on which shelves the product was left to freeze. Additional pipe coils were generally placed on the ceiling to maintain room temperatures of -5 to -10° F.

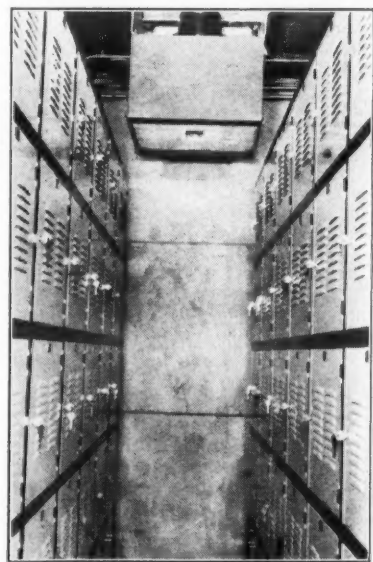
It is in the freezer room of the older plants that one often finds shortages in coil surfaces, as the room is often too small to accommodate the required lineal feet of coil surface. Some operators have said that by placing the meat on the cold shelves, the product froze fast and burned on the under side of the package, and froze too slowly on the top causing large ice crystals and the bursting of cell tissues in the meat.

With the forced-convection units a uniform fast freezing is made possible, since as many as four air changes per minute are circulated over the product. Dehydration is minimized by the maintenance of high relative humidities and by proper wrapping of the products.

With the forced-convection system the freezer room is held at 10° F., this making possible smaller-size condensing units.

From the freezer room the meat is placed in the locker room by the operator, and the tenant has access to his locker by his own key.

Forced-Draft Cooling



Installation of a ceiling-mounted, forced-convection cooling unit in the locker room of the Cuba City plant.

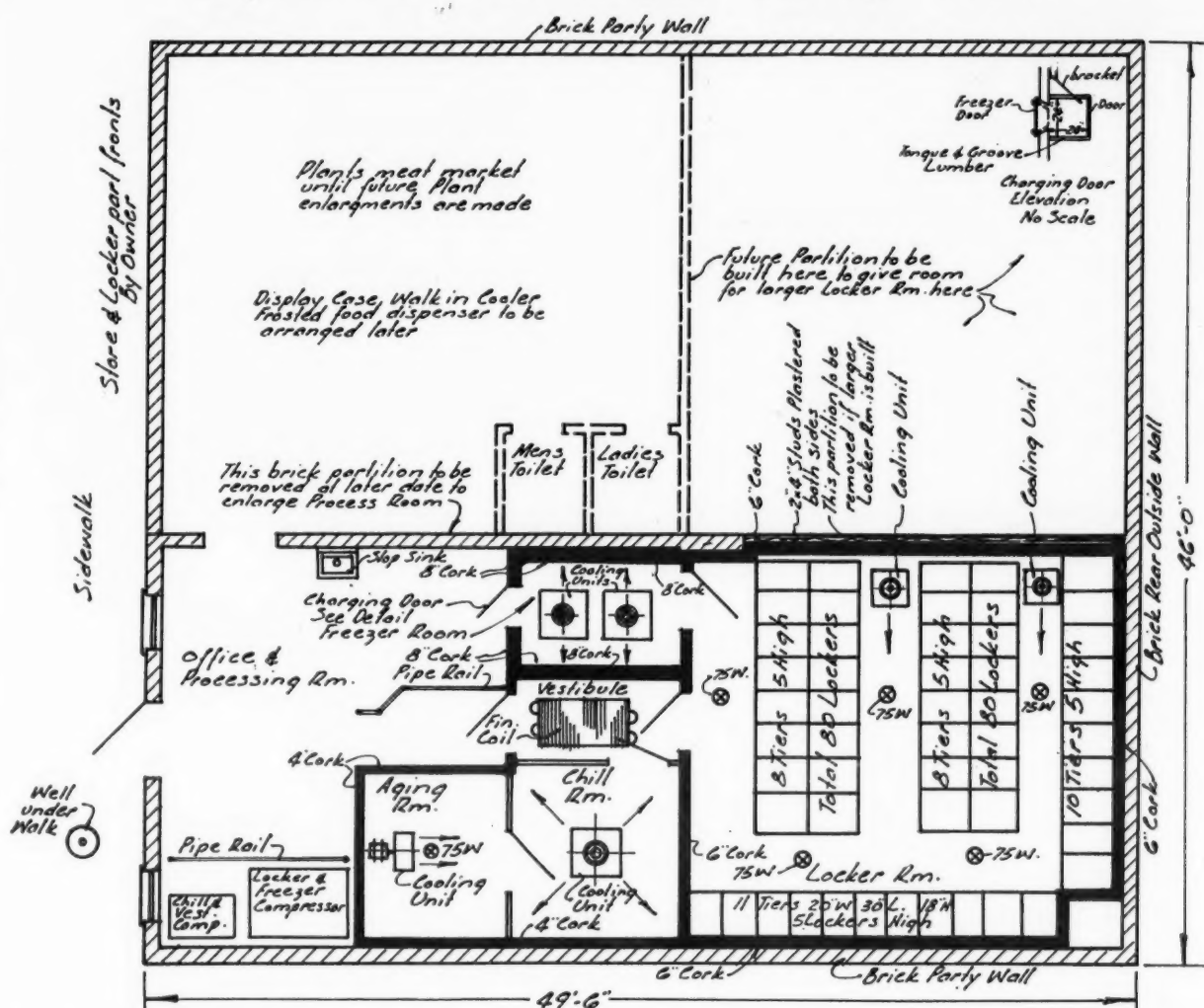
Load calculations are all-important in the design and selection of a locker plant refrigeration system. Proper load calculations will minimize the possibility of disheartening plant failures, and will insure a profitable job for the refrigeration contractor.

In Table 1 is the procedure for making the load estimate for the chill room.

In our belief, most efficient operation of the plant will be obtained by using one condensing unit for the chill room, aging room, and vestibule (if used). This unit should be selected from the manufacturer's catalog by designating a refrigeration suction temperature of approximately 5° F. lower than the air dewpoint, or 20 to 25° F. suction temperature for a methyl chloride machine, for example.

(Concluded on Page 13, Column 1)

Layout Of New Locker Storage Plant



Drawing showing the floor plan of the Cuba City, Wis., locker storage plant described in the accompanying article. The drawing gives dimensions, and shows how the plant can be increased in size to 500-locker capacity; also, where the combination food market will be installed and operated by the plant. Note the use of a wall-mounted forced-convection cooler in the aging room, and the ceiling-mounted blower units in the freezer room, chill room, and locker room. Also note the use of a cross-fin coil in the vestibule, located outside the locker room to cut down door heat losses. Detail of freezer room charging door is given in upper right-hand corner.



When you start on a big installation and it's tagged "rush," you'll find Virginia Service really counts. When you order

that extra supply of refrigerant—V-Meth-L, Extra Dry Esotoo, or Methylene Chloride—you can be sure you'll get it—on time. And you'll know that every cylinder-full is backed by long-time experience in refrigerant production, assuring you of a pure, uniform product.

This combination of Service and Quality means customer satisfaction and more money for you.

V-METH-L

EXTRA DRY ESOTOO

METHYLENE CHLORIDE

VIRGINIA SMELTING CO.

WEST NORFOLK, VIRGINIA

Anaconda Copper Refrigeration Tubes

Dependable!

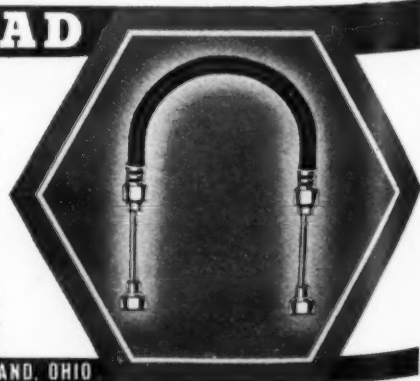
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
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- Flexible conductors for all refrigerants.
- Complete range of sizes and lengths.
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GENUINE WEATHERHEAD REFRIGERATION PARTS

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Load Calculations For Various Rooms In a Refrigerated Locker Plant

(Concluded from Page 12, Column 5)

Sufficient evaporator coil surface must be used to maintain the refrigerant temperature at between 12 to 17° F. below room temperature in order that high relative humidities be maintained.

In Table 2 is the procedure for making load calculations for the freezer room.

In freezer rooms equipped with forced-convection units the product is placed on portable racks, trucks, or shelving constructed of wire or slotted wood to permit free circulation of air around the packages, thus affording quick freezing all through the package.

We have found it good practice to hang the cooling unit from the ceiling without a drip pan, this allowing the cold air stream to blow directly down around the product, affording rapid, even cooling. When

defrosting is necessary a drain pan is attached to the unit, and all condensation of water is caught in this receptacle. (See Fig. 2 for installation of forced-convection unit.)

The freezer room is held at 10° F. (with forced-convection units) with 90% relative humidity and leaving air temperature from the cooling unit at a dewpoint temperature of 3°.

Sufficient coil surface must be installed to maintain the above conditions with a suction temperature of about -5° F. Total c.f.m. air delivery from the two forced-draft units generally should be at the rate of about four air changes per minute. Some plants use only one unit, but we believe that by using excess coil surface and plenty of air circulation the freezing time can be greatly reduced, resulting in a better quality of the frozen meat.

The locker room, the final step in

the Cuba City plant, is maintained at a temperature of 10 to 15° F. with relative humidity of 90%, and leaving air from the coils at a dewpoint temperature of 3°.

Proper controls to provide uniform temperatures must be used in the locker room, and it is good insurance to install protective devices which will avoid or warn of unexpected shutdowns.

WHY A VESTIBULE?

It has been found advisable to have the entrance door of the locker room be reached through a vestibule or anteroom, so the rush of hot air into the room every time somebody enters the room is checked. Construction of such plants with a vestibule will cut operating cost, make possible the maintenance of more satisfactory room temperatures, and eliminate a great deal of the frost accumulation on finned surface cooling units.

In some plants such vestibules are constructed without any cooling unit, but in the Cuba City plant a cross-fin cooling coil is hung from the ceiling of the vestibule, and of course cuts down the temperature difference between inside and outside, and results in a much lower locker room door loss.

MODERN LOCKERS

This cross-fin coil is connected to the condensing unit serving the chill room, acting as a ballast for its load, and set by thermostatic expansion valve to get what refrigerating effect it can without interfering with the normal compressor operation.

The lockers in the Cuba City plant consist of steel boxes, arranged in

tiers of five boxes each, with the individual locker having an entrance door in the front, with its own lock combination and number. Such tiers were formerly all fitted with doors, but today operators are coming to use drawers in the bottom one or two boxes, as drawers allow easier access to the product.

The locker compartments average 20 inches wide by 30 inches deep and 18 inches high, each holding 250 to 300 lbs. of meat. All sides, top, bottom, and ends are perforated with fronts louvered for free air circulation through the entire tier. We advocate lockers built with "legs" to insure air circulation to the floor.

The air motion in a locker room can be as high as one air change per minute.

In Table 3 is the procedure for heat load calculations in the locker room.

In selecting the condensing unit and cooling units for the locker room, the same conditions are used as were given for making the selection for the freezer room, as the refrigerant temperatures, air temperatures, etc., are the same.

While the same condensing unit can be used for both the freezer and locker room as a means of paring first costs, it is best to recommend and install separate condensing units for these rooms, where possible. One big advantage of having separate condensing units and proper valve arrangements is that the freezer unit can be thrown into operation on the freezer room if there is a breakdown in the unit serving the locker room.

Table 4
Door Loss Factors

Factors in decimals equal B.t.u. loss per hour, per cubic foot volume of room, per degree temperature difference between outside of entrance door and inside of cooled room.

Refrigerator Volume in Cu. Ft.	Loss Factor
20	.194
40	.126
70	.090
100	.081
150	.075
200	.067
250	.063
300	.049
400	.044
500	.040
600	.035
700	.033
800	.032
900	.031
1,000	.030
1,500	.020
2,000	.015
2,500	.013
3,000	.010
4,000	.008
5,000	.006

Buenos Aires Penthouse Is Air Conditioned

BUENOS AIRES, Argentina—Penthouse of the superintendent of the "Fabrica Argentina de Alparagatas," built on the roof of the company's factory here, is air conditioned by two Westinghouse Mobile unit conditioners, both connected to a water-cooled condensing unit installed outside of the building. Installation was made by Westinghouse's Buenos Aires branch.

Table 1—Load Calculations For Chill Room

1. Heat gain from transmission through insulated walls, floor, and ceiling is found by multiplying the square feet of surface of each times the temperature difference between the outside of the respective surface and inside of the room, then this product times "K" factor for respective surface of wall construction. A.S.H.&V.E. Guide factors can be used.

2. Door loss heat gain is found by multiplying the cubic foot content of the room times the temperature difference between the surrounding atmosphere outside of the entrance door to the room, and the room temperature, and this product times door loss factor for various size rooms = B.t.u. per hour. (A door loss factor table is given in Table 4.)

3. Heat gain from people who will be entering or working in room is found by multiplying number of persons times 750 B.t.u. per hour.

4. Heat gain due to lighting estimated on basis of wattage times 3.4 = B.t.u. per hour.

5. Heat load from incoming products. A safe rule is 4 lbs. of meat per locker plant box capacity per day. This sum is multiplied by the temperature difference between the incoming meat and room temperature, and the product of this is multiplied by the specific heat of the meat (generally 0.75). Divide the product of this multiplication by 24 hours × 0.67. Example:

$$265 \text{ lockers} \times 4 \text{ lbs. per day} \times 60^\circ \text{ T.D.} \times 0.75 = \text{B.t.u. per hour}$$

$$24 \text{ hours} \times 0.67$$

6. Add the above various heat gain totals and add a safety factor of 10% which will result in the total heat load in B.t.u. per hour.

Above computations are based on maintaining the room at 40° F. with 87% relative humidity, with coil delivering chilled air at dewpoint of 28° F.

Table 2—Load Calculations For Freezer Room

1. Under the latest recommended practice, the product load for the freezer room is obtained on the basis of 2 lbs. of meat per locker capacity of plant per day.

$$265 \text{ lockers} \times 2 \text{ lbs.} = 530 \text{ lbs. of meat to freeze per day.}$$

2. To reduce meat from incoming temperature to the freezing point: (530 lbs.) × (15° T.D.) × (0.45 specific heat of meat) = B.t.u. per hour.

$$24 \text{ hours} \times 0.67$$

3. To freeze the meat (but making no change in temperature): (530 lbs.) × (115 B.t.u. per lb.) = B.t.u. per hour.

$$24 \text{ hours} \times 0.67$$

4. To reduce temperature of meat from freezing point to 10° F.: (530 lbs.) × (15° T.D.) × (0.45 specific heat) = B.t.u. per hour.

$$24 \text{ hours} \times 0.67$$

5. Heat gain due to transmission loss through insulated walls, floor, and ceiling is found by multiplying square feet of surface × temperature difference × "K" factor for respective surface construction = B.t.u. per hour.

6. Lights in use in freezer room: wattage × 3.4 = B.t.u. per hour.

7. People in freezer room (use one person × 870) = B.t.u. per hour.

8. Door loss: cubic contents of room × temperature difference between air outside entrance door and inside room × door factor = B.t.u. per hour. (If a vestibule is used, and the freezer room is entered through it, the load will be cut considerably, and there will be less frost accumulation on the coils).

9. To the total of the above items add a safety factor of 10 to 12% for the total B.t.u. load per hour for the freezer room.

Table 3—Load Calculations For Locker Room

1. Obtain heat gain through wall transmission, using same method as for chill and freezer rooms = B.t.u. per hour.

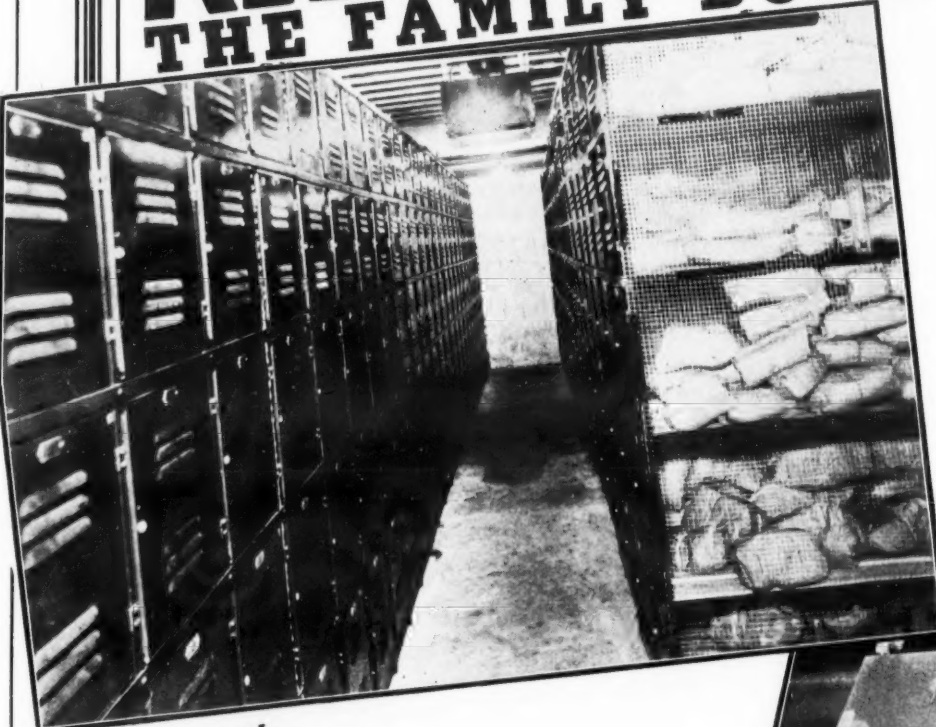

2. Obtain heat gain from door loss through method used for other rooms = B.t.u. per hour.

3. Heat gain from persons (usually figured on basis of two people per 100 lockers). Number of persons × 870 = B.t.u. per hour.

4. Lights. Wattage × 3.4 = B.t.u. per hour.

5. To the total of the above add approximately 15% as a safety factor, and the resulting figure is the total heat load.

REDUCING THE FAMILY BUDGET . . .

valves . . .

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- Installation . . .
Part of 246-Locker
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Anderson Cold Storage
Lockers
Primghar, Iowa
- Refrigeration Unit . . .
Carrier — No. K 15
- Installed by . . .
Malone & Moles
Sioux City, Iowa
- Valves — by . . .
Fred Carlson
Primghar, Iowa
- Valves Purchased through . . .
Refrigeration Supply Co.
Sioux City, Iowa

NOTE . . .

The A-P No. 210 Expansion Valve in illustration is almost covered by thick layer of frost. This never affects A-P Valve efficiency for the Service Engineer writes: "A-P Valves operate much better than the valves we had on before. For one thing, we can come closer to flooding the coils than with previous valves."

Refrigeration Parts Jobbers, who recognize quality, stock A-P Controls.

Three temperatures are important in Locker Storage—chilling, freezing, and storage. The efficiency of each depends upon a minimum fluctuation that only unusual Valve sensitivity can provide. A-P Thermostatic Expansion Valves are offering this sensitivity and accurate temperature control in locker storage plants everywhere.

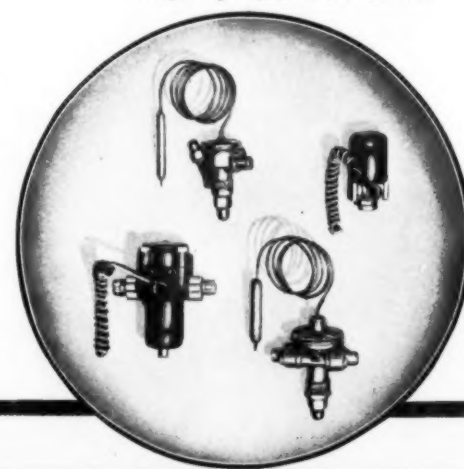
Accurate, Supersensitive, Leakproof, Dependable—A-P Valves provide sure protection to your patron's meats and foods—and service-free operation in every unit of the Locker Storage Plant. This combination always means maximum profit on investment for the owner—and complete satisfaction for the installing and service engineer.

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DEPENDABLE

THE BYWORD FOR A-P VALVES



Engineering

Minneapolis Honeywell 'Polartron' For Commercial Cooling Control Adapted From Heating Use

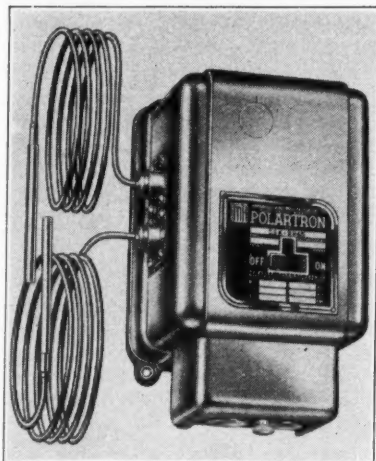
(Concluded from Page 1, Column 4)
system is merely the Minneapolis-Honeywell Series 10 circuit, designed for control of automatic heating systems, applied to the refrigeration field, according to L. B. Miller, manager of Minneapolis-Honeywell's refrigeration division.

Suitable not only for modernization of existing refrigeration systems but equally effective for new installations, the Polartron control is said to compensate for deficiencies in the refrigeration system itself, Mr. Miller declared.

Pointing out that, in the field, commercial refrigeration control has always been a difficult problem, Mr. Miller said:

"Commercial refrigeration equipment must serve a wide variety of installations. It must closely follow the load changes within the fixture. Service in and out of the box and changes in the amount of contents affect the internal load. These conditions vary most over weekends.

"Further, this equipment must sense the constantly fluctuating surrounding temperatures, the most serious of which are the seasonal weather changes. It also must main-



New "Polartron" control for use with commercial refrigeration systems.

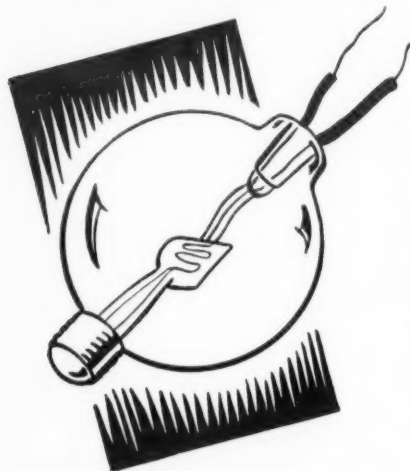
tain proper temperature and relative humidity within the fixture despite all of these variables.

"A major complaint about commercial refrigeration has been the collection of frost on the coils. The occurrence of frost tremendously handicaps the system. Coil effectiveness is reduced and the compressor is forced to labor more in an attempt to maintain the desired conditions.

"Collection of frost means that some moisture is being removed from the products being refrigerated. This not only injures the products, but it also lessens their weight so that an actual dollars-and-cents loss is incurred when the products are sold.

"The Polartron system is extremely flexible. During field tests it has succeeded in reviving some jobs which seemed beyond hope of recovery. Within capacity limits of the refrigeration equipment, the Polartron system will provide precise control and frost-free refrigeration.

"In addition, the Polartron system offers the user fool-proof cooling control. With finger-tip adjustment, the control can be set for any above-freezing temperature."



IS ACTIVATED ALUMINA ANOTHER RADIO TUBE?

(Before DeForest's valve, radio transmission of voices was only dreamed of. The invention revolutionized radio, from dots and dashes to symphonies and swing.)

Here is a question for the best engineering brains in the air conditioning field today: Will Activated Alumina make vital changes in the practice and principle of comfort conditioning?

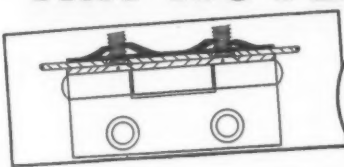
What do your engineers think? The facts already established are, in a few words, these: 1. Activated Alumina has proved its economy for dehumidification. 2. It adsorbs moisture from air efficiently; is inert, and has good physical properties. 3. Equipment using Activated Alumina controls humidity effectively, as many industrial installations prove. 4. It reduces humidity for summer conditioning, giving an invigorating atmosphere, never clammy or shocking.

If you would like to investigate the application of Activated Alumina to your system, we will gladly furnish full information about it. ALUMINUM ORE COMPANY, Sales Agent, ALUMINUM COMPANY OF AMERICA, 1908 Gulf Building, Pittsburgh, Pa.



ACTIVATED ALUMINA
FOR REDUCING HUMIDITY

THE Speed Nut System Cuts Costs IMPROVES ASSEMBLY



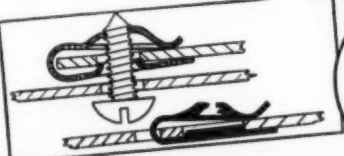
OVER
500
MILLION
USED

Do you know that the SPEED NUT System of Assembly is faster, cheaper and better?

Faster, because it replaces both the threaded nut and lock washer. Discarding even the lock washer alone, saves more than an hour per thousand pieces handled.

Lower in cost because you cut in half the number of pieces, you reduce the weight and cut down the assembly time.

Better assembly because it gives a spring tension grip that does not loosen with vibration. A grip that



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SHAPES
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'Bonderizing' Adapted For Treating Items In Building Field

DETROIT — Adaptation of the Bonderizing process to the treating of such products as steel windows, screen frames, air-conditioning units, medicine cabinets, galvanized sheets, and other building accessories, has been announced by Parker Rust-Proof Co., developer of the process.

Bonderizing, long used as a finishing aid on automobiles, electric refrigerators, washers, and other appliances, is now being used in the mass production finishing systems of many items used in the building field, the company points out in a booklet just issued.

Within the past few months, the producers of Fenestra, Truscon, Campbell, and Soule steel windows have installed conveyor equipment for applying Bonderizing, the company says. American Rolling Mill Co. uses the process in producing its "Paintgrip" galvanized sheets.

The booklet includes photographs of the Bonderizing sections of several manufacturers of architectural iron and steel products which in use are exposed either to outside weather or inside moisture and humidity.

Manufacturers not set up to apply the process in their own plants may furnish Bonderized products on specified applications by having them treated in one of Parker's 22 jobbing service plants, the booklet points out. This applies especially to producers of grilles, doors, stair rails, porch and balcony rails, fences and gates, cast ornamental trim, and other items to which the process is particularly adapted, it is noted.

Spirally Wound Gasket Announced By Azor

NEWARK, N. J. — A spirally wound metal-asbestos gasket, known as the "Flexiwound" gasket, is being manufactured here by Azor Corp.

It is claimed that this gasket combines, to an unusual degree, great mechanical strength, high resistance to corrosion and extreme temperatures, proper compressibility with light bolting, and exceptional resilience.

"Flexiwound" is a general purpose gasket, suggested for use in all standard or special flanges, for boiler tube caps, handholes, etc.

Special Refrigerated Cabinet To Improve Cloud And Pour Tests Of Oil Developed By G-R

BELOIT, Wis. — A special testing cabinet, which is said to make possible several improvements in the method of testing for the cloud and pour points of lubricating oil, has been developed by General Refrigeration Corp., manufacturer of commercial refrigeration and air-conditioning equipment.

A number of these test cabinets have been used by some of the larger testing laboratories throughout the country during the past year, the company says, and actual performance records have been obtained to back up claims made for the equipment.

Other existing methods of producing temperatures for cloud and pour tests involve the use of baths of ice and water, ice and salt, or carbon dioxide and ether. Maintenance of constant temperatures by these methods is laborious, inaccurate, and uncertain, as well as expensive.

Among the several advantages claimed for the General Refrigeration test cabinet are its compactness, the accuracy and constancy of the temperatures maintained, and the speed with which cloud and pour tests can be conducted through its use.

The cabinet is 36 inches long, 36 inches high, and 22 inches deep. It is heavily insulated with corkboard, and has a black enamel finish with stainless steel top and trim.

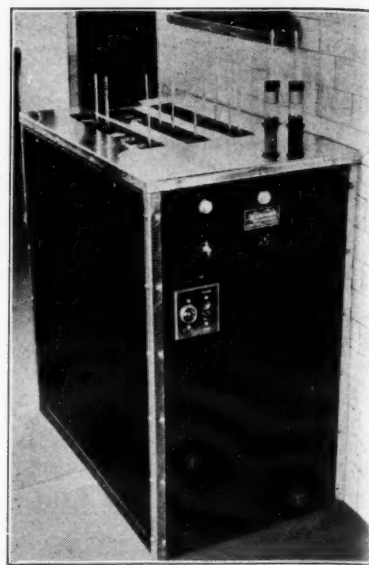
A ½-hp. water-cooled Lipman refrigerating machine, connected to a full-flooded annular type low side, is installed in the base of the cabinet, making the entire equipment self-contained in every respect. Only power, water supply, and drain lines need be run to the cabinet.

The cabinet has three compartments with openings in the top, one for each of the three temperatures at which cloud and pour tests are made. Each compartment has six 2-inch (inside diameter) wells or jackets conforming to A.S.T.M. specifications. These wells hold standard cylindrical oil test bottles, giving the cabinet a total capacity of 18 test bottles.

Temperatures in each compartment are regulated by individual constant-pressure regulating valves. Once set at the proper point, temperatures are maintained automatically and the operator need waste no time in making adjustments.

Temperature in the first compartment is maintained at 30 to 35° F., in the second compartment at 0 to 5° F., and in the third compartment —30 to —25° F. Temperatures are identical in all jackets of each compartment and, if desired, may be quickly changed. A thermometer

Oil-Testing Cabinet



G-R's refrigerated cabinet for conducting tests on oil.

well is also located in each compartment.

After the machine is started, it takes approximately 10 minutes to secure suitable temperatures in the warmest compartment, 20 minutes in the middle compartment, and 35 minutes in the coldest compartment.

A push-button switch controls the starting and stopping of the refrigerating machine, and a pilot light indicates whether or not the machine is running. Safety devices, such as high-pressure cutouts and motor overload protection, are standard equipment on the Lipman refrigerating unit.

General Refrigeration Corp. announces that it is prepared to work with refinery officials in producing oil testing equipment, either of standard or special design, to meet the particular requirements of the laboratory.

St. Louis A.S.R.E. Members See York Movie

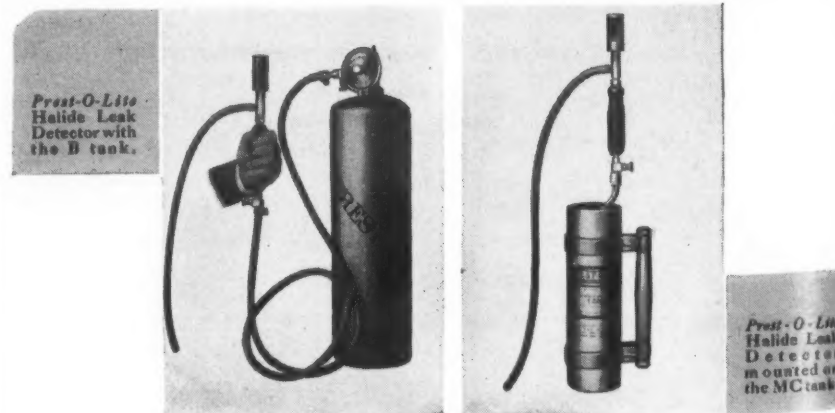
ST. LOUIS—Members of the St. Louis section of American Society of Refrigerating Engineers, and their families and friends, saw the new sound film "Cold Magic," giving the story of York research, design, development, and manufacturing, at their May 27 meeting.

Showing of the York movie, which was held in the RKO building, was preceded by a dinner and short business meeting at the Melbourne hotel.

PREST-O-LITE

Trade-Mark

HALIDE LEAK DETECTOR



The Prest-O-Lite Halide Leak Detector is a positive, sensitive device for locating leaks of non-combustible halide gases in refrigerating and air-conditioning units. These gases—such as F-12 (Freon), F-21, F-114 and Carrene—are relatively odorless, tasteless and colorless, properties which render necessary a quick, sure method of locating leaks.

Ask your jobber or any Linde office for a demonstration and descriptive folder.

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FEATURES

- 1 Assures instant reaction to any concentration of refrigerant gases.
- 2 No preheating, pumping or priming required.
- 3 Economical to use. Need not be lighted until actual testing begins.
- 4 Two-color flame variation gives visible indication of amount of gases.
- 5 Quick clearing of flame after exposure to leaks.
- 6 Suction tube reaches easily into inaccessible places.
- 7 Readily portable—ideal for service work.

Air Conditioning

Johnson Sales Force Gets 'Space Cooler' Plan

GALESBURG, Ill.—Construction and capabilities of the new Johnson "space cooler" and factory policies and sales promotional plans concerning the product were outlined to 15 sales representatives of Johnson Motors in a two-day conference with factory executives here May 15 and 16.

The conference was prefaced by a trip through the company's factory here.

Attending the meeting, in addition to C. A. Thomson, sales manager on Briggs refrigerators, and J. E. Armes, sales manager on Johnson "space coolers," were J. F. Furry, chief engineer, and other members of Johnson's Galesburg staff, S. F. Briggs, chairman of the company, and P. A. Tanner, vice president in charge of sales.

Production of space coolers is being doubled in order to meet orders, it was announced at the meeting.

Louisville Firm Finding Neighborhood Theaters Quite Active Market

LOUISVILLE, Ky.—With four installations currently being made in Louisville, George Jackson, president of the Liberty Engineering & Mfg. Co., reports an increasing interest on the part of neighborhood theater owners in air cooling.

Theaters now being equipped are The Park, The Ideal, The Oak, and The Cozy.

"We have installed cooling systems for 15 downtown and neighborhood theaters," Mr. Jackson said, "and we are now working on two theaters in Indianapolis and two in Lafayette, Ind."

"All our customers have found that a cooling system is well worth the money in increased business that it brings in hot weather. Our sales this year are far ahead of any we have ever had because more and more merchants are giving their customers and clerks the comfort that air conditioning brings."

Installation To Dehumidify Singapore Hospital

SINGAPORE, Federated Malay States—Air-conditioning apparatus has been installed in two patients' rooms, the X-ray screening room, and X-ray viewing room of the General Hospital here. Efforts are being made to remove excess moisture from the air without reducing the temperature more than three or four degrees.

Johnson Motors Meeting At Galesburg



When the Refrigeration Division of Johnson Motors held a sales meeting recently at its Galesburg, Ill., plant, the following group was in attendance:

(Standing, left to right): T. P. Hallock, A. F. White, J. Gerl, J. F. Furry, A. A. Dunlap, Lee L. Smawley, C. A. Thomson, Ben D. Levenson,

Forced-Air Heating Seen As Next Forward Step In Commercial Drying

SAGINAW, Mich.—Application of forced-air heating equipment to the commercial drying industry is being investigated by the Jackson & Church Co. here, which now manufactures oil, gas, and coal-fired furnaces under the Bertossa patents.

The company also makes a varied line of machines used in industry, and last year installed a press for the Sunny Citrus Products Co. at Haines City, Fla.

Grapefruit rinds obtained from the citrus canning companies are collected and placed in the Jackson & Church press, where the moisture content is reduced from 85 to 66%. The pulp is then run through a rotating drum dryer, where the moisture content is reduced to 6%.

The result is a dry chip-like substance, which resembles dry breakfast foods. This material is sacked, and sold to farmers for feeding stock.

"We believe," asserts David L. Perrot, vice president of the Jackson & Church Co., "that present commercial drying methods will be replaced by high-temperature forced-air equipment, and at present are working to that end."

"At the present time we have produced dryers for corn, grain, and other products of agriculture, and are experimenting with equipment for drying citrus fruit rinds and coal. Both of these products contain a high percentage of moisture, and the only way to get it out is to raise the temperature to a point where the water will come off as steam. This puts a tremendous strain on any ordinary heating plant."

Frank Springer To Sell Mills Compressors

SAN ANTONIO, Tex.—The Frank Springer organization has been appointed distributor in the southwest Texas territory for the line of commercial refrigeration compressors manufactured by Mills Novelty Co., Chicago, according to Frank Springer, president.

Mr. Springer's company also has been appointed distributor in the same territory for the Reed attic ventilation system manufactured by the Reed Unit-Fan Co., New Orleans.

Incorporated in the Reed system, which was designed to provide inexpensive home ventilation, is the patented Shut-O-Vent, which provides automatic opening and closing of the ceiling vent and eliminates the rope-operated trapdoor still used by most attic ventilation systems.

Warren Telechron Clock Co. Finds Conditioning Necessary In Manufacturing Tiny Motors

ASHLAND, Mass.—An important production problem in connection with the assembly of the small synchronous motors which represent the major output of Warren Telechron Co.'s plant here has been solved by installation of complete year-around air-conditioning equipment.

Failure to eliminate dust, dirt, and foreign grease from the interiors of the sealed-in-oil motors produced by the plant results in excess wear, and some motor failures, it was found. Also, assembly and inspection work on these motors is close and exact-

ing, requiring the best working conditions obtainable.

The assembly section, a room 75 feet long, 40 feet wide, and with an average headroom of 20 feet, has a volume of 60,000 cu. ft. Air conditioning is provided by a 25.6-ton compressor, driven by a 20-hp. motor. There is a complete change of air in the room every 40 minutes.

A mean relative humidity of 50% is maintained, with 57,000 gallons of water required per day for humidification and air washing. Cooling is accomplished by refrigerant at 46° F., condenser water temperature be-

ing 60° F. Dry-type air filter is used in this job, because of its ability in removing greasy, microscopic dust and dirt.

Installation of the system was made by Lawton Engineering Co., Boston.

A slightly higher atmospheric pressure is maintained in the motor assembly room than elsewhere in the factory, to prevent influx of dust and dirt when the assembly room doors are opened to bring in new material. Temperatures in the enclosure are controlled thermostatically.

In addition to improving the quality of product, health of workers in the assembly section also has been materially improved by the installation, officers of the Telechron company assert.

THE BUYER'S GUIDE

120,000 B.T.U. PER HOUR In A Single Compact Blower Unit!

Large capacity refrigeration installations are now as easy to figure as the simplest coil installation—with the Peerless Product Cooler.

These integral cabinet type units are available in capacities up to ten tons, complete with Peerless High Dispersion Coils, blowers, and motors. There is no assembling to be done on the job—just install expansion valve and wiring and hook to refrigerant lines.

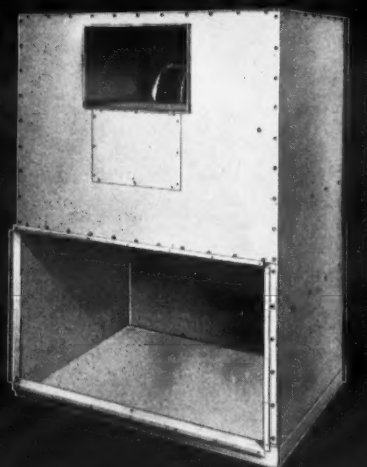
The Peerless Product Cooler is the ideal unit for large refrigerators, cold storage rooms, wine, beer, apple and nut storage, and wherever a large capacity cooler is needed.

PEERLESS of AMERICA, Inc.

ESTABLISHED IN 1912 AS THE PEERLESS ICE MACHINE CO.

New York Factory 43-20 34th Street Long Island City
Main Factory—General Offices 515 West 35th Street Chicago
Pacific Coast Factory 3000 S. Main Street Los Angeles

PEERLESS JOBBERS IN ALL PRINCIPAL CITIES
BUY PEERLESS FOR PERFORMANCE



MAKES Floating Ice

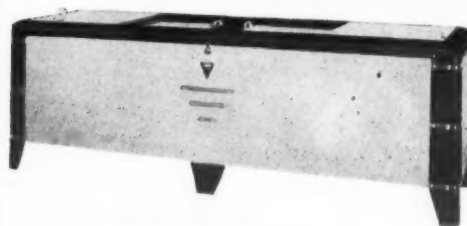


EVERYTHING YOU NEED FOR Profitable Volume

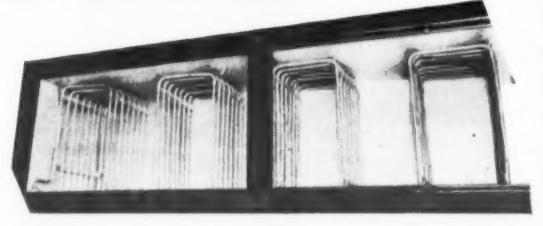
Get additional profitable volume without extra overhead by selling PELCO beverage and beverage-food coolers! PELCO is "package-type"—simply plug it into any light socket. Your present salesmen can sell it to taverns, hotels, bowling alleys, restaurants, dairies—or any place that sells bottled beverages. There's a complete line, smartly finished in modern Pelco red baked enamel with stainless steel trim and chrome-plated hardware. Super-powered PELCO gives unequalled performance—precision manufacture for trouble-free long life—and full factory protection and help, backed by national advertising.

Refrigeration Division
PORTABLE ELEVATOR MFG. CO., Bloomington, Illinois
In Canada UNIVERSAL COOLER CO. of CANADA, LTD. BRANTFORD, ONT.

THE IDEAL SPEED COOLER



Compartments
Capacity
Fast Cooling



COMPARE against anything on the market for compartments, capacity and fast cooling.

Sturdy construction, beautifully streamlined. Stainless steel lids and tracks. Fits any bar. Built in three sizes: 6 ft., 18 cases; 7 ft., 21 cases; and 8 ft., 24 cases capacity. Three cases of 12 ounce bottles to each compartment.

CASH IN on the "hottest" money maker in the industry. The beverage cooler sensation of the year. Some territories still available.

IDEAL BEER COOLER CO. 1500 No. Broadway, St. Louis, Mo.
Manufacturers of all kinds of Liquid Coolers



"Ranco? YES SIR!"

RANCO COMMERCIAL CONTROLS are recognized as leaders in the field—and the Ranco line includes controls needed for locker storage plants.

See your Ranco Jobber—when you need controls for Beverage Coolers, Water Coolers, Ice Cream Cabinets, Display Cases and similar applications.

Ranco Inc., Columbus, Ohio, U.S.A.

RANCO COMMERCIAL CONTROLS

HANDLE A COMPLETE LINE THAT IS PRACTICAL—DEPENDABLE—PROFITABLE



Write for information covering the GR-Lipman distribution plan.
GENERAL REFRIGERATION CORPORATION
Dept. F-2, Beloit, Wisconsin, U.S.A.

THE BUYER'S GUIDE



DECORATIVE

There is an element of decoration in the gleaming brass of Commonwealth fittings which tends to brighten compressors and other refrigerating units but decoration, while pleasing to the eye, is naturally secondary to utility.

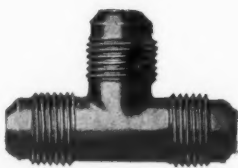
Always conscious of the function of Seepage-Proof Fittings, Commonwealth has designed its entire line of flared tube fittings on the theory that "form follows the function" and the primary purpose of fittings is to be "Built Right to Stay Tight".

Commonwealth adds to the exacting machining of threads and tube seats on metal of precise formula, a concept of graceful contours concealing the rugged strength of each fitting. This beauty as decoration costs the buyer nothing. It is only one of many reasons why Commonwealth Fittings have been preferred by leaders of the industry from its very beginning.

Standard, Semi-Standard and Special Fittings in any quantity, promptly.

COMMONWEALTH BRASS CORPORATION

Commonwealth at Grand Trunk R. R.
DETROIT, MICH.



OUR MASTER LINE

MASTER 4

\$60.00

MASTER 5

\$70.00

MASTER 6

\$75.00

F. O. B. New York



OF REFRIGERATORS

EXTERIOR—High temperature baked DuPont Dulux;

INTERIOR—Acid Resisting Porcelain on Armo Iron; 16-Point Temperature Control—Large Ice Capacity—Automatic Reset Electric Cutout—No fuse; Famous "Life-Time" Current-Saver—Compressor Unit—Double Depth Freezing Space—Round Bar Shelving; Crystal Defrosting Tray; Attractive Striped Evaporator Door; Electric Light.

FEDERAL REFRIGERATOR CORPORATION

57 EAST 25TH STREET
NEW YORK, N. Y.



Equipment and Compressor sales go together. Sell both on one contract. The Sherer Franchise Offers:

★ COMPLETE LINE OF CASES, COOLERS AND BOXES.

★ NEW EQUIPMENT constantly under development, opening new fields for compressor sales.

★ LAYOUT DEPARTMENT—layouts for store modernization programs without obligation.

★ ADVERTISING—Sherer Equipment advertised by mail and in leading trade publications.

SHERER-GILLET CO. MARSHALL
Manufacturers of Refrigerated Display and Storage Equipment

PROFIT WITH Sherer CASE and COOLER FRANCHISE

Write for catalog and franchise details, mentioning territory desired

MELCHIOR, ARMSTRONG, DESSAU CO.

300 FOURTH AVENUE

NEW YORK, N. Y.

Refrigeration • Heating Air Conditioning

PROMPT SHIPMENT FROM LARGE STOCKS
FOR THE RUSH SEASON

BROOKLYN
NEWARK
ROCHESTER
BUFFALO
BOSTON
PHILADELPHIA
HARRISBURG
BALTIMORE
WASHINGTON



"AMERICA'S BELT BIBLE" FREE 1938 Gilmer Belt Catalog

Most complete f. h. p. belt catalog ever issued. 144 Pages. Belts for 4450 models, 135 makes of electric refrigerators listed by lengths, cross-sections, manufacturers' part numbers. Your copy FREE

Send your Name and Address to
L. H. GILMER COMPANY, Tacony, Philadelphia



THE HARRY ALTER CO., 1728 SO. MICHIGAN AVE., CHICAGO, ILL.

Boat-Shaped 'Yacht' Club In Denver Is Air Conditioned

DENVER—It's "a life on the ocean wave" for patrons of the Yacht Club, Denver's newest lounge bar—or at least it seems that way with the club's realistic design, achieved without the use of boats or water, and its year-around air-conditioning system.

The Yacht Club is a rectangular concrete building, painted with thousands of bolt heads on the smoothly plastered exterior walls, giving the impression of rivets on the steel plates of a battleship.

Atop the rounded "bow" of the building there is a complete "pilot house," with glowing frosted glass windows, outlined with bright neon tubing. Lifeboats, swung in realistic davits, are strung up and down two sides of the building to give the illusion of an ocean liner.

SYSTEM FLEXIBLE

Air-conditioning requirements for the building were established by Harry Kartusky, owner, to meet three needs. First, the system had to be flexible enough to meet variable load requirements, from moderate patronage during the day to a crowd of over 200 during the evening. Second, winter heating should be supplied by the air-conditioning system. Third, the system should have adequate capacity to offset the heavy sun-effect on the flat composition roof of the building.

The air-conditioning system was installed by Electrical Products Corp. to meet the express stipulations of the owner. A Carrier Weathermaker unit, housed in the basement of the building, operates at from 1,000 c.f.m. to 5,000 c.f.m. capacity, to meet the variable load conditions encountered.

Cooling capacity is provided by a refrigerant coil, and heat is obtained by a steam coil connected to the heating system of the building next door. During the winter season a temperature of 76° is maintained in the building by thermostatic control.

DUCT ARRANGEMENT

Conditioned air is supplied to the building through nine ducts, six of which supply the main restaurant and three of which discharge air into the bar. Under ordinary conditions all the air in the building is recirculated, but a supply of 25 to 35% fresh air is available when necessary. Fresh air is drawn into the building from a central court, which is shaded from the sun.

Maximum operation of the system provides a change of air every five minutes. When outside air is being supplied to the building, excess air is drawn out through an exhaust fan located on the roof.

\$250,000 Houston Hotel Job Is Completed

HOUSTON, Tex.—Kribs & Landauer of this city has completed the installation of a \$250,000 air-conditioning system in the Texas State hotel here, after 10 months of work on the project.

Believed to be the largest completely air-conditioned hotel in the city, each room is under individual temperature control. Powers Regulator Co. installed the system of air-operated controls used in the building.

York Given Navy Contract For Two Submarines

YORK, Pa.—York Ice Machinery Corp. has just received a contract from the U. S. Navy Department to furnish air-conditioning and refrigeration equipment for two submarines and a cruiser. Equipment will be installed in the navy yards at Brooklyn and Portsmouth.

India's First Conditioned Train Demonstrated

DELHI, India—India's first air-conditioned train, consisting of four first class coaches, each accommodating 14 passengers, recently completed a demonstration run from here to Agra and return, a total distance of about 225 miles.

Where Air-Conditioning Systems Were Installed In Several Florida Cities In '37

(Data Compiled By Florida Power & Light Co.)

Name and Address Make Tonnage Hp.

Residences

Fred Fisher, Cocoa	Carrier	.75	.75
Lynn Blackwell, Live Oak	Carrier	.75	.75
T. A. Scott, Live Oak	Fairbanks-Morse	7.5	9.0
Dr. David Kennedy, Sarasota	Fairbanks-Morse	.75	.75
John Bass, Sarasota	York	.75	.75
H. T. Kohl, Sarasota	Pleasantaire	.75	1.0
Mrs. Franklin Miles, Sarasota	Carrier	.50	.75
Andrew Schmidt, Coral Gables	General Air Co.	3.0	3.5
J. Newberger, Coral Gables	Frigidaire	.5	.75
J. E. Calkins, Coral Gables	Frigidaire	.5	.75
Knapp, Fort Lauderdale	Frigidaire	1.0	1.0
S. Black, Miami	Frigidaire	.75	1.5
G. A. Worley, Miami	Frigidaire	1.5	3.5
M. S. Altmayer, Miami	Frigidaire	.75	1.5
A. A. Ungar, Miami	Frigidaire	1.5	3.5
W. B. Medlin, Miami	Frigidaire	3.0	5.0
H. G. Sease, Miami	Frigidaire	.75	1.5
L. M. Rumsey, Miami Beach	Frigidaire	.75	.75
O. G. Finkle, Miami Beach	Carrier	.25	.75
Max Fleisher, Miami Beach	Brunner	5.0	6.0
E. J. Sparks, Miami Beach	Research	5.0	3.5
J. O. Horning, Miami Beach	Carrier	8.0	10.0
Harry Richman, Miami Beach	Frigidaire	2.0	2.0
Malcom Austin, Miami Beach	Bryant-Gas	3.0	3.75
F. B. Snite, Miami Beach	Carrier	1.5	2.0
W. F. Charters, Miami Beach	Kelvinator	.75	.75
Emery Flin, Miami Beach	Kelvinator	1.25	2.0
H. W. Warden, Miami Beach	Carrier	5.0	6.5
S. A. Lynch, Miami Beach	York	4.0	9.0
Mrs. B. Grady, Miami Beach	Airtemp	3.0	3.33

Offices

Dr. Sidney Ney (Dentist), Daytona Beach	Carrier	.75	.75
Daytona Sheet Metal Works, Daytona Beach	York	.6	.8
Van Priest Dept. Store, Madison	Airtemp	3.0	3.0
First National Bldg., Miami	Carrier	.75	1.0
O. W. Pittman, Miami	Airtemp	3.0	3.0
Paramount Entpr., Miami	Frigidaire	7.0	9.5
American Bank & Trust, Miami	Frigidaire	.66	.75
Geo. Baker, Inc., Miami	Airtemp	1.5	2.0
Crittenden Bootery, Miami	Airtemp	3.0	3.0
Metropolis Pub. Co., Miami	Airtemp	3.0	3.0
Henry Hohaus, Miami Beach	Airtemp	3.0	3.33

Retail Stores

Sigrid's Beauty Parlor, Daytona Beach	Airtemp	3.0	3.0
Electric Service Co., Daytona Beach	Airtemp	3.0	3.0
Lucille Dress Shop, St. Augustine	Merchant & Evans	5.0	6.5
Felder-Bell Electric Store, West Palm Beach	Westinghouse	.75	1.0
G. W. Mann & Co. Electric Store, West Palm Beach	Airtemp	3.0	3.0
Harrison Photo, Miami	Carrier	1.5	2.0
Pittsburgh Plate Glass Co., Miami	Carrier	7.5	10.0
Cannon Shoe Co., Miami	General Electric	6.2	7.75
L. Haskin (Optometrist), Miami	Frigidaire	.75	1.0
Nankin Shoe Co., Miami	Frigidaire	2.5	3.0
Richter's Jewelry, Miami	Frigidaire	2.5	3.0
Mangels of Florida, Miami	Carrier	7.5	8.0
Cowen-Nankin, Miami	Carrier	8.0	9.0
Marie Gordon, Miami	Airtemp	3.0	3.0
N. J. Mirsky, Miami	Airtemp	3.0	3.0
M. W. Milby (Barber), Miami	Cool-Air	.75	1.0
Ingalls Electric Co., Miami	Westinghouse	.5	.75
Walter A. Frederick Market, Miami	Frick	10.0	11.0
The Hub, Inc., Miami	Frigidaire	7.5	8.75
F. A. Hendricks Cigar Store, Miami	Westinghouse	.5	.75
H. A. Lansfield Corp., Miami	Carrier	7.0	9.5
Miami Photo Supply, Miami	Airtemp	3.0	3.0
Mangel's of Florida, Miami	Carrier	5.2	6.1
G. C. Bowen Electric Equipment, Miami	Dual-Air	.5	.5

Theaters

Sparks Theaters, West Palm Beach	General Electric	80.0	77.5
V. I. A. Theater, Palatka	York	15.0	17.5
Mayfair Theater, Miami	Carrier	47.0	49.4
Adrian Corp., Miami	General Electric	32.0	42.0

Hotels

Alcazar Hotel, Miami	York	70.0	78.0
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Restaurants, Bars & Night Clubs

Neptune Grill, St. Augustine	Merchant & Evans	10.0	10.0
Morrison's Cafeteria, West Palm Beach	York	20.0	28.0
Vicks Bar, Inc., Miami	Airtemp	6.0	6.0
Seven Seas Restaurant, Miami	General Electric	20.0	24.0
Esquire Bar, Inc., Miami	Carrier	12.0	15.0
Dempsey Vander, Miami Beach	York	40.0	48.0
Paddock Bar, Miami Beach	Frigidaire	20.0	25.0
Sam Barken, Miami Beach	Frigidaire	10.0	14.0

Banks

Bank-Melbourne, Melbourne	Frigidaire	7.5	9.0
First Federal Savings & Loan, Miami	Worthington	45.0	51.0

Miscellaneous

Catholic Rectory (Study), Daytona Beach	Carrier	.75	.75
So. Bell Telephone Co., Miami	Frigidaire	6.0	6.0
So. Bell T & T Exchange, Hollywood	Frigidaire	3.0	3.66
WKAT (Radio Station), Miami Beach	General Electric	3.0	4.5
So. Bell T & T Exchange, Miami Beach	York	4.5	4.8
So. Bell T & T Exchange, Miami Beach	Frigidaire	5.0	6.0
York Sales Co. (Apt. House), Miami Beach	Akeraire	2.2	2.75

Drug Stores

Liggett's Drug Store, Daytona Beach	Carrier	15.0	17.5
Walgreen's Drug Store, Daytona Beach	Carrier	5.0	5.0
Dade Drug Store, Coral Gables	Airtemp	8.0	12.0
Walgreen's Drug Store, Fort Lauderdale	Baker	15.0	20.0
Walgreen's Drug Store, Miami	Carrier	85.0	102.0

Distributor-Dealer Doings

Houston Utility Outlines Cooperative Program & Selling Plans For Dealers

HOUSTON, Tex.—A broad program of dealer cooperative activity on electric refrigerators, ranges, laundry equipment, radios, commercial refrigeration, and domestic and commercial air conditioning has been announced for this year by Houston Lighting & Power Co.

The company's cooperative plans for the year, together with suggestions to dealers on how to make best capital of the sales opportunities on each appliance, are contained in a booklet recently sent to retailers throughout the utility's territory.

Part of the utility's program on home appliances, commercial refrigeration, and home and commercial air conditioning includes promotional advertising in newspapers, radio announcements, billboards, and theater slides. In addition, an educational campaign on home appliances will be carried on through the company's 40 home service workers.

HOUSEHOLD PLANS

On household refrigeration, the utility will assist dealers in adjusting customer complaints, distribute educational literature to all its customers, including 8,000 new users to be connected to company lines this year, assist dealers in demonstrations, shows, and exhibits, help them hire and train salesmen, and conduct sales contests among the men.

To increase refrigeration sales, the utility suggests that dealers work with moving men, milk men, laundry drivers, and other vendors to obtain prospects' names, hold store demonstrations to prospect groups, insist on fair size down payments, train and supervise salesmen carefully, and offer bonuses to sustain additional sales effort in slack-season periods.

On laundry equipment, the utility company offers to unearth prospects through its home service staff, assist dealers with ironer demonstrations, conduct dealer demonstrations, and furnish sales training, display, and advertising assistance.

RANGE PROMOTION

To realize maximum profit from electric range sales, the utility advises dealers to plan a sustained sales activity, tie-in with Modern Kitchen Bureau promotions, electrical schools, rural shows, etc., furnish salesmen with a list of users of other appliances for range promotion work, conduct cooking schools before small groups, and sell all-electric kitchens, especially to home owners, new builders, and rural residences and farms.

Uniform COMPRESSOR CASTINGS

For nearly a million refrigeration and air conditioning units have been produced by Nelson in the past five years. If your compressor specifications call for QUALITY castings,

Let us quote!

NELSON BROTHERS CO.
SAGINAW, MICHIGAN

SUPPLIES • PARTS • TOOLS

Refrigeration — Air Conditioning
Oil Burner — Stoker

Write for Our New Catalog
VINCENT BRASS & COPPER CO.
100 North Second St., Minneapolis, Minn.

For Information on Motors

FOR ALL TYPES OF
Air Conditioning and
Refrigeration Equipment
WRITE TO

Wagner Electric Corporation
641 Plymouth Ave.
St. Louis, Mo.

SAVE 20-40%
Write for details of
Alco's new Small
Capacity "TK"
Thermo Valve

Alco Valve Co. - St. Louis, Mo.

In addition to advertising and sales training helps, the utility also will assist dealers with trained economists for home demonstrations, demonstrate at exhibits, shows, and fairs, work up rural prospects, and assist dealers in closing electric range sales.

On dairy equipment, the utility will conduct an all-year educational campaign, using eight rural salespeople who will devote full time to selling the value of this equipment to farmers. Direct-mail advertising also is planned, in addition to rural shows and exhibits, and coordinated activities with rural agents, vocational instructors, milk inspectors, etc. Educational farm meetings also are an important part of the program.

AIR CONDITIONING

In the home air-conditioning field, the utility advises dealers to work closely with architects and builders, and to contact all people of adequate income, especially those who work in air-conditioned offices or who ride frequently on air-conditioned trains.

Regular contacts with users, as well as periodical direct-mail to families of adequate income, also are recommended.

In addition to its advertising campaign during May, June, July, and August, the utility will contact new home builders in the interests of adding conditioning equipment as a sales feature. Architects also will be kept informed of interesting home applications. The utility will display dealers' room coolers on its sales floors, and will assist dealers in closing individual sales.

COMMERCIAL PLANS

Commercial air-conditioning activities will be concentrated in June, July, and August, and will follow in general the campaign in the residential field, with the exception that it will be applied to business prospects. Storage-type air conditioning will be promoted, in addition to other types.

As their part in the drive, the utility asks that dealers contact all possible prospects, giving them the "profit" story both as to business it retains and new business that it brings in. The story of air conditioning as a business investment that pays real dividends will be stressed. Dealers are cautioned to install systems of adequate capacity, so that every user will be a satisfied one.

On commercial refrigeration, the utility will contact all commercial customers on its lines, giving them the story of electric refrigeration's advantages, in terms of profit to them. All leads obtained will be turned over to dealers for follow-up. Outstanding installations will be publicized in advertisements.

Jackson, Miss. Dealers Join In Drive

JACKSON, Miss. — Several of Jackson's leading dealerships participated in the annual city-wide Automatic Refrigeration and Electrical Appliance Exposition held here recently.

Among firms holding special display exhibits during the week were: McKay Plumbing Co., Leonard; Better Living Appliance Co., General Electric; People's Furniture Co., Stewart-Warner; Davis Plumbing Co., Servel Electrolux; Rice Furniture Co., Kelvinator; and Mississippi Power & Light Co.

Baltimore Firm Specializes On All-Electric Kitchens

BALTIMORE—Offering an unusual service in the planning of built-in fixtures for every room in the home, the Crescent Corp. has been organized as a Westinghouse dealership at 231 Park Ave. here, with Harry Myerberg as president. The firm plans and installs all-electric kitchens. A model kitchen is featured in the company's window display.

Utility's All-Electric Promotion Kitchen Is Portable

SAN ANTONIO, Tex.—The south Texas department of San Antonio Public Service Co. is promoting the all-electric kitchen by means of a complete portable kitchen assembly which is packed up and moved from one district office to another, where demonstrations are conducted.

The kitchen assembly includes electric range, refrigerator, water heater, and dishwasher, with steel kitchen cabinets and Monel metal work surfaces. Appliances used in the display are General Electric, and the cabinets are made by Whitehead.

Set up in the utility's district showroom, only plugging-in is required to make the kitchen a real working unit. Present itinerary calls for a four week stop at all district offices, with a cooking demonstration each Friday afternoon by Miss Alice Strange, south Texas department home economist.

Attendances of 250 and 340 persons, respectively, were recorded at the kitchen's first two showings in Boerne and New Braunfels. The portable kitchen demonstrations have created a great amount of interest, and coupled with the utility's kitchen planning service have resulted in several complete kitchen and individual appliance sales, reports C. Greidler, sales manager for the utility's south Texas department.

Atchison Heads Montreal Electrical Club

MONTREAL, Que., Canada—George R. Atchison, of the Southern Canada Power Co., was named president of the Electrical Club of Montreal for the 1938-39 year when members held their annual meeting in the Queen's hotel here recently. He succeeds A. Douglas Sutherland.

Other officers named were W. Lyall Gray, first vice president; R. N. Coke, second vice president; B. C. Fairchild, secretary-treasurer; and J. N. Mochon, L. F. Hamilton, Murray W. Hayes, S. S. Cameron, C. A. Thorne, and J. K. Wilson, members of the executive committee.

Secretary-treasurer Fairchild reported a record membership of 346, a slight increase over the 344 members at the corresponding time last year.

Auto-Lec Adds 2 More Stores In Louisiana

NEW ORLEANS—Opening of new associate stores at Houma and La Place, La., to handle sales of Crosley electrical appliances and automobile supplies has been announced by Auto-Lec Stores, Inc. here. John B. La Place is manager of both new associate stores. Auto-Lec Stores expects to occupy its new Shreveport branch headquarters by July 1, in time for its tenth anniversary celebration.

Year's Free Service Features Opening

FAYETTEVILLE, Ark.—A year's free service on all Norge appliances installed in connection with the opening of its new headquarters at 21 N. Block St. here is being offered by Home Appliance Co., Norge dealership. M. C. Toman is head of the store's sales promotion staff, which handles the complete Norge line, in addition to operating an all-make service department.

'Sam' Vining To Address San Francisco Dealers

SAN FRANCISCO—Vernon E. (Sam) Vining, director of department store sales for Westinghouse Electric & Mfg. Co., will talk about "Dirt Selling" before the Radio & Appliance Dinner to be held July 27 in the Mart Club of the Western Furniture Exchange and Merchandise Mart here. The dinner is being sponsored by the Mart's radio and appliance division.

Charleston Maytag Co. Opens Branch Store

CHARLESTON, W. Va.—Charleston Maytag Co. has opened a new west side store at 111 W. Washington St. for the sale of Norge refrigerators and ranges, Maytag washers and ironers, and Progress vacuum cleaners.

Mann Opens Service Shop

COLUMBIA, S. C.—Mann Electric Service has been opened at 817 Harden St. here by J. W. Mann as a Hotpoint appliance dealership and service firm.

Lange Distributes Airtemp In Saginaw, Mich.

SAGINAW, Mich.—Wm. A. Lange & Son has recently been appointed Chrysler Airtemp distributor in the Saginaw area. First installation made by the company was a 3-hp. unitary store conditioner, installed in George's Steak Shop here.

Bouchard To Handle York

NASHVILLE, Tenn.—John E. Bouchard & Sons Co. has been established here as York air-conditioning and refrigeration distributor. Hamell Hayes is manager.

THE BUYER'S GUIDE



**Tested
Approved**

A spacious new walk-in cooler that operates at a lower cost than was ever before thought possible. Every day a Koch Econ-O-Cooler will cut down overhead and expenses. It has greater capacity, longer life, and more efficient refrigeration.

The Econ-O-Cooler is only one of a number of standard Koch products. There are 108 standard models in the vast Koch line, including display cases, coolers, vegetable cases, and refrigerators for meats, bottled goods, flowers, bakery items, dairy products, etc. There is a Koch product to fill every need.

**THE NEW
ECON-O-COOLER**

There are more than 3500 sales representatives who profitably sell the Koch line. Yet many attractive territories are still open to aggressive sales organizations. Write today for full particulars and prices.

KOCH REFRIGERATORS
NORTH KANSAS CITY, MO.

**NEW
Percival
STREAMLINER!**



DISTRIBUTORS WANTED!

Write for details of Profit-making franchise. Complete PERCIVAL line meets every requirement of the modern food store.

Modern styling . . . Beautiful design . . . Outstanding construction . . . Economical operation! TOMORROW'S case, presented TODAY! Get the jump on other distributors by selling this modern marvel of electrical refrigeration. Its NEW style and NEW features give you exclusive selling advantages! NEW PERCIVAL FINANCE PLAN HELPS YOU SELL.

C. L. PERCIVAL COMPANY
DES MOINES IOWA
52 YEARS OF SERVICE 1886-1938

TYLER
WELDED STEEL Refrigerators






This year, more than ever, the Tyler line is the popular line in the commercial refrigerator field. Now complete with Top Display, Double Duty, Delicatessen, Reach-In cases and Walk-In coolers. Sizes and types to take care of every prospect. Welded steel construction and other exclusive features make TYLER

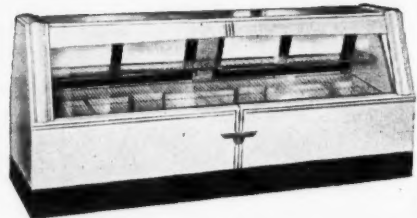
THE FAST SELLING LINE

Tyler's quantity production methods have made possible a new standard of values that gives you unbeatable sales ammunition. Write now for newest literature and dealer details.

TYLER FIXTURE CORP. Dept. E. NILES, MICH.
NEW YORK OFFICE: 601 W. 25TH ST. CHICAGO OFFICE: 1832 W. OGDEN AVE.

THE BUYER'S GUIDE

THE NEW 1938 C-B KOLD-O-MATIC

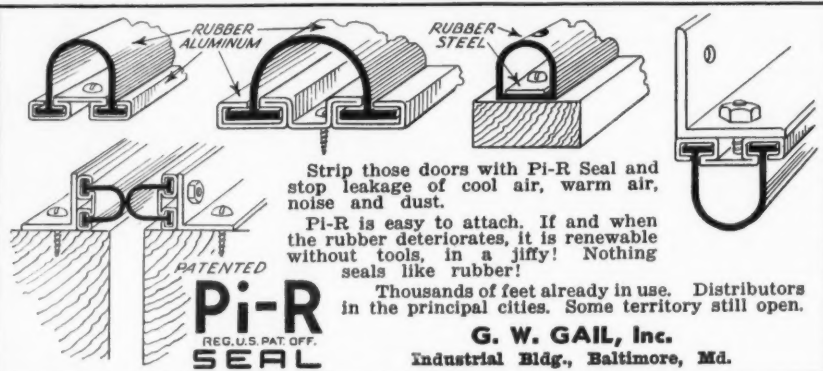


Display Cases & Refrigerators
Fulfill Constantly Increasing
Demands For

- MORE DISPLAY
- MORE EYE APPEAL
- PROPER TEMPERATURE
- PROPER HUMIDITY
- PROVEN CONSTRUCTION
- PROVEN QUALITY

EXCLUSIVE TERRITORIES AVAILABLE
FOR QUALIFIED DISTRIBUTORS

THE CINCINNATI BUTCHERS SUPPLY CORPORATION
CINCINNATI, OHIO



Strip those doors with Pi-R Seal and
stop leakage of cool air, warm air,
noise and dust.

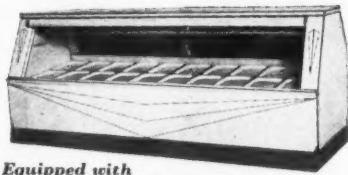
Pi-R is easy to attach. If and when
the rubber deteriorates, it is renewable
without tools, in a jiffy! Nothing
seals like rubber!

Thousands of feet already in use. Distributors
in the principal cities. Some territory still open.

Pi-R
REG. U.S. PAT. OFF.
SEAL

G. W. GAIL, Inc.
Industrial Bldg., Baltimore, Md.

MANY MODELS — ONE QUALITY



Equipped with
Famous Fogel Lifetime Vision

Fogel equipment is available to meet any
customer's specifications as to size, shape,
finish, etc. But—every Fogel product
which leaves our factory must meet the
Fogel Specification of Quality—the highest
possible. The appreciation of our one-quality
policy by distributors and consumers,
is indicated by our constantly increasing
volume of business. Inquire today about
our full line of refrigerated food storage
and display equipment. Interesting dis-
tribution proposition to qualified firms.

FOGEL REFRIGERATOR COMPANY SINCE
16th & Vine Sts., Phila., Pa. 1899

'I WON'T BUY A GAUGE WITHOUT THE RECALIBRATOR!'

That has been the attitude of many service men since
the RECALIBRATOR feature was incorporated in
Marsh Gauges, Thermometers and Recorders. Experi-
ence and laboratory tests have shown that when a
bourdon-tube instrument is knocked out of adjustment
the mere removing and re-setting of the pointer at one
point on the scale, does not correct it throughout the
entire range. The Marsh RECALIBRATOR gets at the
heart of the trouble, however. By simply turning the
RECALIBRATOR screw (see illustration) the distortion
of the bourdon tube is compensated for and this
re-calibrates the instrument throughout its entire range.

Gauges and dial thermometers with this
feature cost little more than the ordinary
kind. It is an exclusive Marsh feature.

Ask for the big refrigeration catalog cover-
ing this and other Marsh betterments.

JAS. P. MARSH CORPORATION
2067 Southport Avenue CHICAGO, ILL.



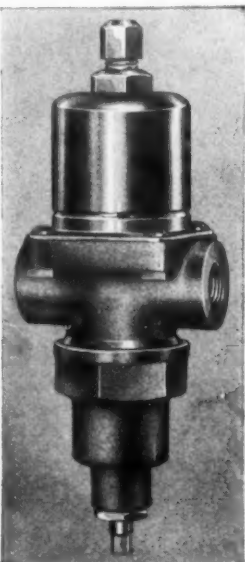
Compound Gauge



High Pressure Gauge

MARSH Refrigeration Instruments
GAUGES—THERMOMETERS—RECORDERS—MERCURY SWITCHES

For All Refrigerants Except Ammonia A M I N C O



No. 614

Pressure Controlled Water Regulating Valve

Amino No. 614 Water Regulating Valve
is quiet in operation, free from chattering;
practically friction-free and provides a
maximum flow of water with a minimum
head pressure differential.

This valve is available for all refriger-
ants except ammonia, in one model and at
a new low price; its construction with two
bellows makes a safe barrier between
refrigerant and water sections. A mounting
bracket, at no additional charge, is furnished
with each valve.

The new Amino 614 is the last word
in pressure controlled water regulating
valves. Full details in Bulletin 15-38, free
on request.

At Your Favorite Jobber

American Injector Co.
1481 Fourteenth Ave. Detroit, Mich.

Nema Household Sales To Distributors In April Total 216,732 Units

The following 17 member companies
of the Refrigeration Division of the
National Electrical Manufacturers As-
sociation (Nema) reported household
refrigerator sales for April, 1938:
Apex Electrical Mfg. Co., Crosley
Radio Corp., Edison General Electric
Appliance Co., Inc., Fairbanks, Morse
& Co., Frigidaire Corp., General Elec-
tric Co., Gibson Electric Refrigerator
Co., Johnson Motors Co., Kelvinator
Div. Nash-Kelvinator Corp., Leonard
Div. Nash-Kelvinator Corp., Norge

Div. Borg-Warner Corp., Sparks-With-
ington Co., Stewart-Warner Corp.,
Sunbeam Electric Mfg. Co., Uniflow
Mfg. Co., Universal Cooler Corp., and
Westinghouse Electric & Mfg. Co.
Merchant & Evans Co. did not
report.

The sales of the reporting com-
panies do, however, include units
manufactured for the following con-
cerns: Montgomery Ward & Co.,
Potter Refrigeration Corp., and Sears,
Roebuck & Co.

	SALES FOR APRIL, 1938			
	Domestic	Canadian	Other Foreign	Total
Lacquer (Ext.) Cabinets Complete				
1. Chest	126	1	50	177
2. Less than 3 cu. ft.	2	344	95	441
3. 3 to 3.99 cu. ft.	3,808	22	1,775	5,605
4. 4 to 4.99 cu. ft.	21,689	1,853	2,960	26,502
5. 5 to 5.99 cu. ft.	44,840	1,793	1,561	48,194
6. 6 to 6.99 cu. ft.	83,056	1,018	772	84,846
7. 7 to 7.99 cu. ft.	15,111	157	246	15,514
8. 8 to 9.99 cu. ft.	6,909	61	78	7,048
9. 10 to 12.99 cu. ft.	89	89
10. 13 cu. ft. and up	1	1
11. Total Lacquer	175,631	5,249	7,537	188,417
Porcelain (Ext.) Cabinets Complete				
12. Up to 4.99 cu. ft.	218	9	84	311
13. 5 to 5.99 cu. ft.	3,765	189	147	4,101
14. 6 to 6.99 cu. ft.	10,004	51	96	10,151
15. 7 to 7.99 cu. ft.	3,814	9	107	3,930
16. 8 to 9.99 cu. ft.	2,165	5	157	2,327
17. 10 to 12.99 cu. ft.	279	3	94	376
18. 13 cu. ft. and up	496	7	15	518
19. Total Porcelain	20,741	273	700	21,714
20. Total—Lines 11 and 19	196,372	5,522	8,237	210,131
21. Separate Systems 1/4 hp. or less	133	625	1,886	2,644
22. Separate Household Evaporators	1,490	220	2,247	3,957
23. Total—Lines 20, 21, and 22	197,995	6,367	12,370	216,732
24. Condensing Units 1/4 hp. or less	587	183	2,319	3,089
25. Cabinets—No Systems	69	1	78	148
Index Value* of Total Dollar Sales	82.7	215.4	95.0	84.6

*Based on weighted sales for 1934, 1935, and 1936.

Westinghouse Expansion To Cost \$12,000,000

NEW YORK CITY—By spending
about \$12,000,000 on new buildings,
new machinery and equipment, and
other improvements and repairs in
its plants, district offices, and radio
stations throughout the country,
Westinghouse Electric & Mfg. Co.
intends to do its share in helping to
prime the national business pump.
A. W. Robertson, chairman of the
board, has announced.

This sum is approximately the
same as the amount appropriated
for similar projects in 1937. Mr.
Robertson said. However, he pointed
out, the 1937 outlay was made to
keep up with mounting demands for
increased production, whereas the
1938 expenditures are to be made
primarily because the company
wants to be ready for increased
production when it comes.

"This program," said Mr. Robert-
son, "extends all the way from
Boston, where a warehouse and
service building will be erected, to
Emeryville, Calif., which will get
two new buildings, equipment, and
repairs."

Included among the Westinghouse
projects planned or under way are:

New England area—\$2,000,000 for
general improvements, repairs, new
buildings, and equipment at sales
division headquarters in Boston,
merchandising division works at
East Springfield, Mass., and other
points.

Ohio—\$600,000 for improvement
of manufacturing facilities in small
motor division, Lima, and additions
to facilities at other points.

Maryland—\$200,000 for purchase
and rehabilitation of building, new
equipment, improvements, and re-
pairs for radio division, Baltimore.

Forrest Webster Directs Union Metal Sales

CANTON, Ohio—Forrest U. Web-
ster recently has been appointed
manager of sales development for
the Union Metal Mfg. Co. here.

Mr. Webster was associated with
Cutler-Hammer, Inc., for a period
of nine years as advertising man-
ager, and for three years as merchan-
dising sales manager. Active in the
affairs of National Electrical Manu-
facturers Association, he is a past
president of National Industrial
Advertisers' Association and the
Industrial Advertisers Association of
Milwaukee.

April Sales Up as New York, Pennsylvania, Illinois Lead

States and Territories	Quantity Household Low Sides	
	April	Cumulative
Alabama	1,877	6,051
Arizona	330	1,792
Arkansas	1,297	3,967
California	11,283	37,789
Colorado	1,087	4,264
Connecticut	3,141	8,587
Delaware	334	1,132
District of Columbia	2,187	6,759
Florida	1,731	5,919
Georgia	2,725	7,341
Idaho	617	2,477
Illinois	19,597	52,124
Indiana	5,417	15,253
Iowa	3,927	12,537
Kansas	2,562	8,052
Kentucky	2,651	7,775
Louisiana	2,142	8,184
Maine	671	1,930
Maryland	2,777	7,411
Massachusetts	8,902	22,468
Michigan	8,026	22,781
Minnesota	4,883	15,651
Mississippi	1,085	3,312
Missouri	5,543	19,456
Montana	238	1,629
Nebraska	1,727	5,099
Nevada	251	705
New Hampshire	420	1,327
New Jersey	9,443	22,863
New Mexico	424	1,256
New York	26,194	66,640
North Carolina	3,002	11,957
North Dakota	392	1,299
Ohio	11,575	31,708
Oklahoma	2,156	8,462
Oregon	783	4,769
Pennsylvania	20,145	56,842
Rhode Island	1,103	2,388
South Carolina	1,427	4,898
South Dakota	578	1,580
Tennessee	2,794	10,147
Texas	7,247	30,095
Utah	1,021	3,594
Vermont	617	1,369
Virginia	3,113	10,435
Washington	1,729	10,444
West Virginia	2,041	6,235
Wisconsin	4,614	13,241
Wyoming	169	727
Total United States	197,995	592,721
Canada	6,367	16,990
Other Foreign (Incl. U. S. Possessions)	12,370	45,668
Total For World	216,732	655,379

Electrification Program Adds 825 Prospects

GREENVILLE, Ohio — Darke
County Rural Electric Cooperative,
Inc., has just completed the addition
of 222 miles of electric lines in
Darke and Preble counties, adding
825 new farmer-prospects to the lists
of electric refrigerator and appliance
dealers in this territory.

Refrigerators and other home ap-
pliances were demonstrated during a
two-day program celebrating com-
pletion of the electrification project.

Pennsylvania, New York, Illinois Led In Feb. Sales

States and Territories	Quantity Household Low Sides
Alabama	1,628
Arizona	373
Arkansas	1,025
California	8,100
Colorado	1,219
Connecticut	1,587
Delaware	217
District of Columbia	1,609
Florida	1,223
Georgia	1,447
Idaho	753
Illinois	10,645
Indiana	3,259
Iowa	2,998
Kansas	2,067
Kentucky	1,775
Louisiana	1,921
Maine	446
Maryland	1,581
Massachusetts	5,838
Michigan	4,351
Minnesota	2,889
Mississippi	910
Missouri	4,672
Montana	468
Nebraska	1,292
Nevada	73
New Hampshire	162
New Jersey	4,512
New Mexico	484
New York	13,622
North Carolina	3,198
North Dakota	443
Ohio	6,753
Oklahoma	1,945
Oregon	1,163
Pennsylvania	14,045
Rhode Island	278
South Carolina	1,451
South Dakota	232
Tennessee	2,641
Texas	7,678
Utah	885
Vermont	323
Virginia	3,261
Washington	3,036
West Virginia	1,447
Wisconsin	2,664
Wyoming	206
Total United States	134,946
Canada	2,578
Other Foreign (Including U. S. Possessions)	11,202
Total for World	148,726

New York, Pennsylvania, Illinois & California On Top In March

States and Territories	Quantity Household Low Sides
Alabama	1,606
Arizona	450
Arkansas	1,135
California	10,857
Colorado	1,193
Connecticut	2,560
Delaware	332
District of Columbia	1,924
Florida	1,350
Georgia	1,599
Idaho	625
Illinois	13,289
Indiana	3,808
Iowa	4,046
Kansas	2,482
Kentucky	2,267
Louisiana	2,583
Maine	490
Maryland	2,135
Massachusetts	4,701
Michigan	6,747
Minnesota	4,683
Mississippi	770
Missouri	6,029
Montana	621
Nebraska	1,378
Nevada	250
New Hampshire	563
New Jersey	6,505
New Mexico	226
New York	17,896
North Carolina	3,677
North Dakota	346
Ohio	7,423
Oklahoma	2,923
Oregon	1,367
Pennsylvania	12,953
Rhode Island	577
South Carolina	1,157
South Dakota	500
Tennessee	2,930
Texas	10,874
Utah	883
Vermont	220
Virginia	2,806
Washington	2,760
West Virginia	1,511
Wisconsin	3,872
Wyoming	260
Total United States	162,139
Canada	5,704
Other Foreign (Incl. U. S. Possessions)	15,216
Total for World	183,059

SPORLAN
THERMOSTATIC
EXPANSION VALVES
with Confidence!

Jobber Activities

He's a Champion Tube Bender



Joe Porter, winner in the copper tubing bending contest, gets the cup from H. W. Small of the Thermal Co., Inc., St. Paul jobber, which sponsored the contest, while Mr. McIntosh of the Imperial Brass Mfg. Co., co-sponsor, looks on.

Thermal Co. Stirs Interest Of Service Men In Their Craft With Novel Contest

ST. PAUL—A soft copper tubing erection "championship" contest, in which service men were the participants, featured the annual Thermo-Imperial Clinic held here May 20 by Thermal Co., Inc., in cooperation with Imperial Brass Mfg. Co., reports H. W. Small, Thermal Co. president.

The contest had to do with bending and erecting copper tubing and flare fittings into a specified design, contestants having been sent a copy of the contest problem a week prior to the meeting, together with rules which were to be followed in the competition.

Interest in the meeting was increased greatly through the championship contest, Mr. Small reports, 80 service men and dealers attending, despite the fact that another powerful counter-attraction, the fishing season, had just opened. Admission to the meeting was by card only, the desire being to limit attendance to active service men, their employers, and members of the employer's staff.

All contestants were required to register upon entering the hall. Other contest rules were as follows: "Contestants will furnish own tools and sufficient copper tube of 1/2-inch o.d. size to complete the problem. All else will be provided by the sponsors of the contest. (Nine feet of tube will be enough.) Tube must be in one length (uncut) rolled into coil of any convenient size.

"No pipe joint compound need be used on any joint. The contest will be run in heats. Groups of convenient size will be made up and the group winners will be entered in the finals.

"All discussions and awards will be decided by three judges selected by the sponsors. Their decision will be final in all matters affecting the contest.

"The winners shall be determined on the following basis:

"The first three who complete their problem and lay it on the finish table shall have their elapsed time recorded. Elapsed time shall not alone determine the winner, however, the following conditions will be considered:

"A tolerance of plus or minus 1 inch will be allowed on all dimensions shown on the problem sheet. Should any dimension exceed these tolerances, the entry is automatically disqualified.

"For any of the following conditions found on the completed problem, the contestant shall have added to his actual elapsed time the amount set forth:

"Each poor flare on tube joint, 15 seconds.

"Loose flare nut, 15 seconds.

"Marred brass nut or brass fitting (such as the mars made by pipe

wrench). This does not apply to the cast iron tee or the iron fitting used as a starting point.

"Each fitting marred, 15 seconds.

"Kinked or flattened tube, 60 seconds.

"General form of problem not followed, although dimensioned points are within tolerances, 60 seconds.

"When the above penalty times have been added to the contestant's actual elapsed time, the contestant having the least total time, including assessed penalties, shall be declared the winner."

Although comparatively few service men entered the contest, interest in the competition was high, Mr. Small reports, everyone in the room crowding around the entrants to watch them solve the problem. Each contestant had a different way of approaching the problem, Mr. Small says. No two service men used the same kind of tools.

In addition to service men, much interest in the contest developed among the employers present, says Mr. Small. The employers, he found, were interested because they felt that the men entered in the contest would take pride in their work, and that neat work would be recognized as an art.

Judges of the competition were Herman Conrad, of Conrad Refrigeration Co., Art Palen, of Palen Refrigeration Service, and A. R. Mullin, of Mullin Brothers Co. These men timed the contestants, and made all decisions in connection with the erection problem. Each contestant was given a numbered tag, which he attached to his entry upon completion of the problem.

Winner of the contest was Joe Porter, who was awarded the silver cup, prize in the competition, and a cash prize of \$10. According to rules of the contest, he may enter the finals of next year's contest to defend his championship. Permanent possession of the trophy will go to the service man winning it three times.

Because of the small number of entrants, the contest was not run off in heats, as it had been planned. Future contests, however, will be run off on that arrangement, Mr. Small says.

Some slight changes were made in the problem, also. Instead of a 4 x 4 post and 1/2 by 1/2-inch union as a starting point, a 1/2-inch pipe tee was used. Also, contestants were allowed to screw the pipe tee connection by hand, due to the fact that many of them would not have thought to bring a pipe wrench. If the fitting was hand tight, no penalty was assessed for looseness.

Another feature of the contest which produced considerable interest was the so-called "Calcutta" held in connection with it. Each contestant's

name was auctioned off before the start of the tubing erection contest, and the total amount received placed in a jack-pot, which went to the holder of the winner's name.

This increased competitive interest in the various contenders, Mr. Small points out. Where the number of entries is large, the "Calcutta" money can be split into first, second, and third awards, he says.

A number of service men present, who did not enter the contest because they wanted to see "how things went," have announced their intention of getting into next year's competition, Mr. Small says. He estimates that entries for the 1939 event will be between 30 and 50 men.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

FACTORY FIELD service supervisor with home appliance experience. Give complete information regarding experience, education, references and personal information. Sell yourself in your first letter. Box 1048, Air Conditioning & Refrigeration News.

POSITIONS WANTED

EXPERIENCED INSTALLATION and serviceman. Fifteen years in Detroit making installations of large commercial refrigeration jobs in breweries, hotels, meat markets, etc., and air conditioning installations in department stores, taverns, beauty shops and restaurants. Expert "trouble shooter." Experienced with Freon, ammonia, CO₂, methyl chloride. Capable of taking complete charge of sizable service department. Age 43, married. Box 1050, Air Conditioning & Refrigeration News.

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MAKE MONEY by selling the Ehrlich line of refrigerator cases, walk-in coolers, refrigerators and compressors to meat markets, grocers, etc. Complete financing arrangements. Write or see EHRlich REFRIGERATOR MFG. CO., St. Joseph, Mo.

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WANTED FOR Cash 1,000 GE and Westinghouse defective units. All models. We want to rebuild these so as to have a stock on hand to take care of immediate shipments to our customers. Advise models you have and price. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 5801 Dickens, Chicago.

EQUIPMENT FOR SALE

LARKIN BEER Coolers—30 repossessed Larkin dual control beer coolers. All models from 2 to 5 beer lines. Mostly 4 beer and 1 water models. All in perfect operating condition, repainted and reconditioned. Original list \$169.00. Price \$30.00 each, net cash, F.O.B. TRILLING & MONTAGUE, 24th & Walnut Sts., Philadelphia, Penna.

ISOBUTANE highest quality. Send your cylinders for refill. Price in lots of 100 lbs. 60¢, 80 lbs. 65¢, 50 lbs. 90¢. Smaller lots \$1.00 per lb. STANDARD REFRIGERATION CO. OF PITTSBURGH, 1148 Dohrman St., McKees Rocks, Pa.

FLOATS, CHECKS, Compressors—rebuilt and guaranteed. General Electric highside floats \$1.95; can also be used on Gibsons, Majestics (any sulphur job), comes with brackets for mounting. General Electric check valves with six inches of 5/16 line on each end 95¢. General Electric rotary compressors, rebuilt, \$9.95 including fly-wheel. Can also be used on Norges and others: height 7 1/2 inches. General Electric 3 blade fans 25¢. General Electric bellows for G.E. switches 98¢. Kelvinator and Frigidaire 1/2 H.P. compressors as is, but in good condition, \$5. Legs as is, 9" and 12", 10¢ each. Standard size defrosting porcelain pans 24¢. Mullins evaporators Gibson style (specify for dry or flooded system), 2 or 3 trays (less trays) \$2.75. INTERBORO, 350 Pearl St., Brooklyn, N. Y.

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MAJESTIC UNIT Replacements—The only original direct factory Majestic replacements. Guaranteed 18 months in writing. All models \$30.00. Immediate delivery from our stock of 2,000 units. Also G. E. and Westinghouse rebuilding guaranteed 18 months from \$30.00 up. Largest rebuilders of Hermetics in the world. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 5801 Dickens, Chicago.

100% SATISFACTION GUARANTEED—Hermetic rebuilding service. G.E.—Westinghouse—Majestic—U. S. Hermetic—etc. Our success in rebuilding sealed units is founded on these facts—10 years in the

refrigeration industry—5 years' concentrated effort on hermetically sealed units. Customers in 37 states had hermetically sealed units rebuilt or exchanged by us in the past year. Complete factory equipment for precision rebuilding. One year guarantee on all rebuilt units. Exchange service available on most makes and models. Write for prices and descriptive literature. REX REFRIGERATION SERVICE, INC., 2226 S. State St., Chicago, Ill.

GENERAL ELECTRIC and Westinghouse hermetic units rebuilt. Guaranteed unconditionally for one year and returned to you refinished like new. Units are entirely disassembled in our large modern shop, tested through every step of production during rebuilding with the most complete test equipment for accurate work, then subjected to exhaustive running tests under actual operating conditions. Each unit measures to exacting standards after rebuilding. Prices \$30.00 on

General Electric DR-1, DR-2, and Westinghouse; \$35.00 on General Electric DR-3. Quotations furnished on other models. Quick service—guaranteed work. REFRIGERATION MAINTENANCE CORP., 365 East Illinois St., Chicago, Ill.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

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I WOULD like to get in touch with a manufacturer interested in manufacturing an air conditioning unit, patent applied for. A compact machine, completely automatic with all the essentials of air conditioning for summer or winter. Can be manufactured at a small cost. Would consider selling patent outright or on royalty basis. T. A. MILHOLLAND, 1524 Peyton St., Little Rock, Arkansas.

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HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.



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All bearings diamond bored. Positive lubrication of parts by newly developed process plus forced feed lubrication in all models. Sizes 1/8, 1/4, 1/2, 3/4, 1 H.P.

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Combination Dehydrator and Strainer

With dispersion tube. Dehydrant is located inside asbestos sack supported in turn within a fine mesh brass screen. 2" O. D. x 12" long flanged brass shell. Dehydrant capacity 20.5 cu. in. Weight 3 1/2 lbs.

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Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

ACME INDUSTRIES INC.

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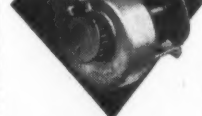
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When your customer's cooler doesn't work right—when dead air spots and freezing zones impair foods and the humidity is too high or too low—it's time for you to show him Action-Air System—a patented system of correct air circulation in coolers.

Sells itself on a demonstration. Pays for itself out of savings. Makes good profit for you—adds enthusiastic new customers—leads to repeat business. Used in wide variety of applications since 1932. Write for our attractive proposition today.

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THE BROWN CORP., 615 Bellevue Ave., Syracuse, N.Y.

A tight system calls for FITTINGS THAT WILL STAY TIGHT

IMPERIAL S. A. E. flared fittings have been setting a mighty fast pace in the air conditioning and refrigeration field . . . and their rapid acceptance by installation and service men is based on results. Imperial fittings are tight when the job is finished and they stay tight.

Write for catalog covering complete listing of sizes and prices. IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago

IMPERIAL Fittings ORDER FROM YOUR JOBBER
VALVES • TOOLS • CHARGING LINES • FLOATS • DEHYDRATORS • STRAINERS



S. A. E. FLARED FITTINGS

Brass forged nuts, tees, elbows and crosses—will not crack. Heavier and stronger than standard—non-porous—no seepage or season cracking. Tees and elbows have flats for wrench.